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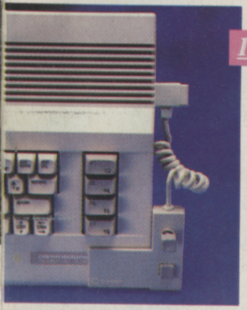

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64 POWER!

CCI View

Dear CCI Reader,

There is a letter in this issue of CCI in which a reader who is satisfied with his present computer asks if he should upgrade to another. Our advice is to forget it. If he is happy with what he has got, why move? In the classic American phrase "If it works, don't fix it" the fact that he has a Plus 4 does not change the matter. Yes, the Plus 4 may not be the flavour of the month, or even of the year for computer users but if it fulfills the purposes of its owner then why bother to dump it and spend cash to buy another?

But of course, like everything else in life, it isn't as simple as that. If you buy a computer like the Plus 4 that for whatever reason drops out of popularity, you feel impelled by all sorts of forces to think about changing. Automobile manufacturers influence you into buying new cars by altering the shape or design of their cars. Likewise with computers all that glam new and bigger and better memory, the extra speed (0.2 seconds access instead of 0.3. Wow!), all those extra bells and whistles are the attractions to make you toss your (un)worn-out electronic hand maiden aside and embark on an affair with a new and better-endowed box of binary tricks. This is the age of fast obsolence, of the disposable tissue, the disposable cigarette lighter, the disposable watch, why not the disposable computer?

We are, of course, living in society that exists by producing the new. Never mind if the present product works perfectly well and provides the power and service needed, what would happen if we all stopped buying things? Well, it just might be that we would start using more efficiently what we already have and begin producing more efficiently too instead of so wastefully that we are endangering our planet and its atmosphere.

How can we resist those who try to make us buy,buy, buy? It's very difficult. There is, says Nancy Picard our Editorial co-ordinator and sociology expert, peer pressure. The keep-up-with-the-guy-next-door syndrome. There is also fashion, the feeling that you don't want to be left behind and outmoded and there is also the suspicion that if you do purchase whatever is the latest perceived need, in computers as well as anything else, not only will your electronic power increase but somehow your whole life will be enhanced.

Wow! It makes you feel good just to think about it doesn't it? You only do wordprocessing but no more dowdy old Plus 4, hooray for a brand new Amiga! With this in mind we have started this month a fascinating new series on the computer they said was dead, the 64, which should help you get more power out of the computer you already have — or may have just bought not being aware that some people regard the 64 as our of date as the Plus 4! We believe that if you get the best out of what you have, you may not want anything else.

I am not trying to discourage anyone from upgrading from a Plus 4 to a more powerful or useful computer but you should need that extra power and have a use for it before you allow yourself to be pressured into buying it. If you don't need it but just want it, provided you understand what you are doing that's all right too if it's your money. However, if you are somehow pushed into spending your cash when you don't need to then you are becoming someone else's tool. Someone else is running your life when you should be in control — as you are, or should be, of your computer. Freedom of choice is not just the freedom to buy but the freedom from too much influence to buy as well. The computer with its growing links to DTP is offering us all new ways of using another freedom, that of expression, which is, incidentally one of the freedoms cited in the United Nations Charter. Iran was one of the signatories of that charter, yet the Ayatollah Khomeini has called for the murder of the author Salman Rushdie for writing a book. I haven't read the book — I found Rushdie's earlier success Midnight's Children unfinishable. Nevertheless being involved in the world of computers which is bringing easier access to information and greater possibility of expression, it horrifies me to think that anyone should be condemned to death for the mere act of writing or publishing a book no matter how offensive it might be. It was Voltaire who said "I disagree with everything you say but I will defend to the death your right to say it." Perhaps we could also keep in mind a phrase which I believe appears in the Koran, the Holy Muslim Book, "When God created man, he taught him the art of expression."

Salman Rushdie and the Ayatollah Khomeini should both have freedom of expression without a threat to their lives. They may seem a long way from Commodore Computers but you are reading this magazine because we have the freedom to publish it — and that is a freedom which is worth defending even if you disagree with every word I say.

Antony Jacobson
Managing Editor and Publisher

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Light Power

Bell Laboratories (the research arm of American Telephone and Telegraph) expected to announce soon a breakthrough – a computer processor (chip) operated by light, not electricity.

The device incorporates nearly 10,000 "gates" – compared with 1m on the most sophisticated electronic chips, which would for example, be adequate to control a relatively simple piece of equipment, such as a dishwasher.

Optical devices use the light emitted by a laser as the power source for processing information.

It is not known whether the device is completely dependent on light for its operation, or whether it is a hybrid that also employs some traditional electronic techniques.

The processor could be the first step towards the development of an optical computer running on light rather than electricity.

These less sophisticated optical devices will almost certainly be used in public telephone networks, built of optical fibre cable.

Third Millenium

Third Millenium Software Ltd. have been signed by Microprose to produce two new products for 16-bit machines in 1989.

Peter Moreland, Software Development Manager for the two projects, said, "Having worked with Mike for many years, I am delighted that he has decided to direct the development of some first class products for Microprose."

Personal Assistant

Personal Assistant is an automated information and messaging system recently introduced by Mirrorsoft. It allows the user to send and receive telexes and electronic mail messages and transmit text-based facsimiles. The system automatically formats telex messages.

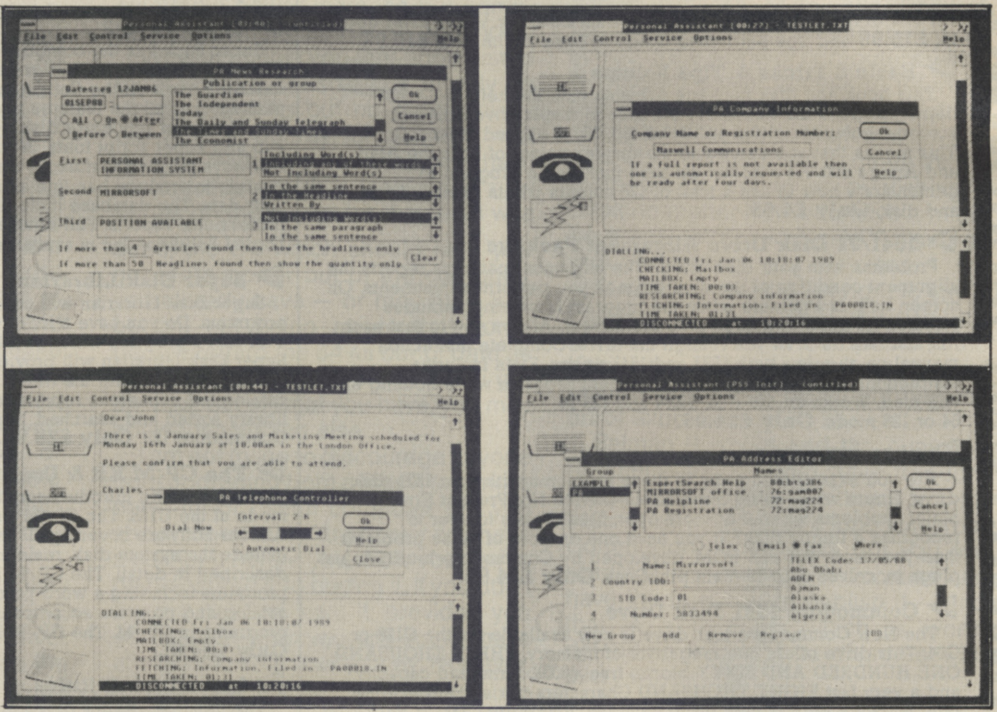
It also enables the user to access a wealth of business information about UK registered companies, and Profile (previously World Reporter) for searching through published press, journal and research material.

It aims to minimise the technical knowledge and expertise required to use a PC to send messages to, and receive messages from, other computers and telecommunications devices, and to access remote databases, the company tells us.

Personal Assistant is designed to run on all IBM PC compatible computers. The software is based on Microsoft Windows, and a Presentation Manager version is also planned.

Price: £199 (+VAT) and includes free registration and telex validation, and free connect time for one month with one of the UK's leading host computer suppliers of electronic mail services.

Contact: Mirrorsoft, Headway House, 66-73 Shoe Lane, London EC4P 4AB. Tel: 01-377 4645.



Datestr eg 12JAN86: 01SEP88

○ All ○ On ● After ○ Before ○ Between

The Guardian
The Independent
Today
The Daily and Sunday Telegraph
The Times and Sunday Times
The Economist

First: PERSONAL ASSISTANT INFORMATION SYSTEM — 1: Including Word(s) / Including any of these words / Not Including Word(s)

Second: MIRRORSOFT — 2: In the same sentence / In the Headline / Written By

Third: POSITION AVAILABLE — 3: Not Including Word(s) / In the same paragraph / In the same sentence

If more than 4 Articles found then show the headlines only

If more than 50 Headlines found then show the quantity only

Company Name or Registration Number: Maxwell Communications

If a full report is not available then one is automatically requested and will be ready after four days.

```
DIALLING...
    CONNECTED Fri Jan 06 10:18:07 1989
    CHECKING: Mailbox
    MAILBOX: Empty
    TIME TAKEN: 00:03
    RESEARCHING: Company information
    FETCHING: Information. Filed in   PA00018.IN
    TIME TAKEN: 01:31
  - DISCONNECTED    at    10:20:16
```

Dear John

There is a January Sales and Marketing Meeting scheduled for Monday 16th January at 10.00am in the London Office.

Please confirm that you are able to attend.

Charles

☐ Automatic Dial

Group: EXAMPLE / PA

ExpertSearch Help - 80:btq386
MIRRORSOFT office - 76:gam007
PA Helpline - 72:mag224
PA Registration - 72:mag224

○ Telex ○ Email ● Fax ○ Where

1 Name: Mirrorsoft
2 Country IDD:
3 STD Code: 01
4 Number: 5833494

TELEX Codes 17/05/88
Abu Dhabi
ADEN
Ajman
Alaska
Albania
Algeria

IADA

The computer programming language Ada is the standard for defence systems in all NATO countries and has also become specified for large non-military computer projects.

Developed as a highly structured language to eliminate programming errors, it is so elaborate that programmers have found it difficult to check that their computer code obeys all the Ada rules.

Help has finally arrived, Cristie Electronics, a small UK company, has developed Ida, a software tool which helps not only to construct Ada programs, but also to find any errors and correct them before the programs are translated by a "compiler" into detailed instructions for a particular computer.

The company claims Iada is the only "pre-compiler" which edits programs and automatically finds mistakes in both the syntax and the semantics of the code.

Ada programs are also run on personal computers or even lap-tops. It can be used to edit and check parts of a program without taking up time on the main computer.

Safer Data

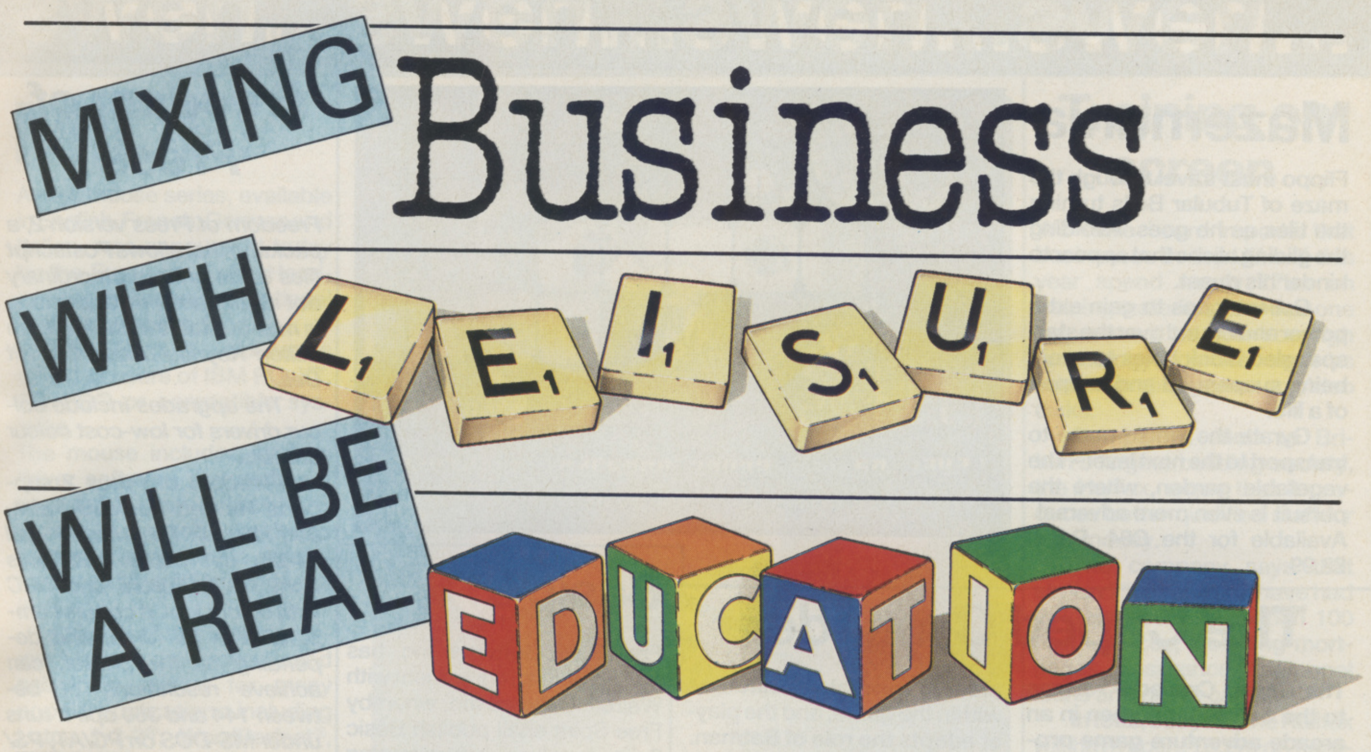
Hayes Microcomputer Products, of the US, is selling a modem in North America which allows for an error-correcting technique which ensures that data sent over the telephone line arrives intact.

It will soon be available in the UK. Most of the leading companies will bring out products manufactured to the V.24 standard this year.

Reports reveal that the market for modems is growing in spite of concern that they would become obsolete as telephone companies converted their networks from analogue to digital lines.

Market analysts now reckon that the modem market will be healthy for several years.

The standards for error correction and compression (which will be called V.24 bis) will be packaged together in modems with another standard, V.32, developed four years ago. It standardised the speed at which modems operate to 9,600 bits of information (equivalent to about 200 words) per second.



Commodore computer show

Britain's brightest event for Commodore computer users is back! And there's more to see than ever before.

This show has three main themes covering some of the major uses to which Commodore machines are put. There are over 70 key companies who will be exhibiting their latest products, which means that just about everything that's new in the Commodore world will be on show!

Novotel Exhibition Complex,
Hammersmith, London W6
Friday to Sunday
June 2 to 4
10am-6pm Friday & Saturday; 10am-4pm Sunday

Business

Many companies will be demonstrating their latest software and hardware, specially designed to release the full business potential of Commodore computers.

As well as products for the C64 and Amiga series, you'll be able to try out applications for the price-beating Commodore PC compatible micros.

And you'll also be able to attend seminars covering all aspects of using Commodore micros in your business.

Leisure

The C64 and Amiga computers are the most powerful 8 and 16 bit micros for producing fast-action arcade quality games. The range of new software on show will demonstrate how these machines' power is continually being stretched, producing faster and even more addictive games with superb graphics.

If you're a keen game player, you'll find there's so much on offer at the show you're guaranteed a real treat!

Education

Commodore micros are now used as educational tools all over the country. With the development of BBC Basic on the Amiga, and the advent of Desktop Video (combining TV pictures with text and graphics), the range of educational applications is endless.

At the show you'll see how the latest software packages are making real breakthroughs in the educational sector, and be able to try them out for yourself.

Special Events

As well as special events and presentations, you'll also be able to meet some of your favourite celebrities, and maybe get a chance to talk with them about how they use micros in their work.

So for a great day out, whether you want to see what the future holds for Commodore computers, to buy the latest software or to get advice on specific applications, the Commodore show is the place to go. And if you send in the coupon today, we'll knock £1 off the price of each ticket!

- ***For the first time we are offering a family ticket for just £11 allowing entry for two adults and two children – saving up to £7 off the usual entry price!***

How To Get There
By Underground: Hammersmith (Piccadilly, Metropolitan & District).
By Bus: 266, 714, 716, 290, 30, 72, 73, 74.
Car parking facilities available at the Novotel.

Advanced ticket order Commodore computer show

POST TO: ***Commodore Show Tickets,***
PO Box 2, Ellesmere Port,
South Wirral, L65 3EA.

Please supply:

☐ Adult tickets at £4 (save £1)................ £ ______
☐ Under 16s tickets at £2.50 (save £1)..... £ ______
☐ Family ticket at £11 (save £7)............... £ ______
Total £ ______

☐ Cheque payable to Database Exhibitions
☐ Please debit my Access/Visa card no:

☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry date: ☐ / ☐

Signed..

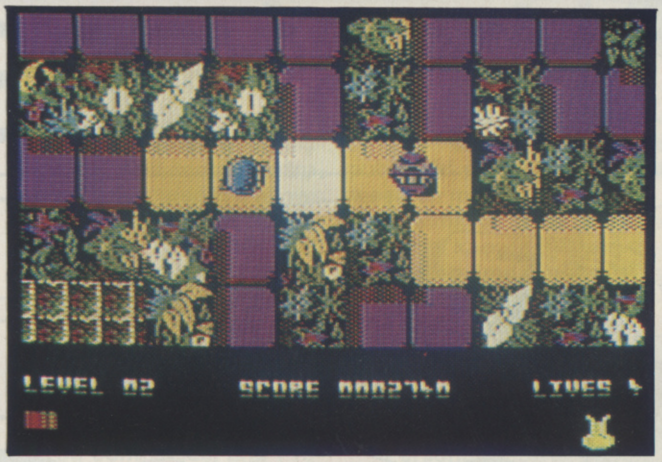
Admission at door:
£5 (adults),
£3.50 (under 16s)

Advance ticket orders must be received by Wednesday, May 24

Name..
Address..
....
....Postcode...........................

PHONE ORDERS: Ring Show Hotline: 051-357 2961
PRESTEL ORDERS: KEY *89, THEN 614568383
MICROLINK/TELECOM GOLD ORDERS: 72:MAG001
Please quote credit card number and full address A677

Mazemania



Flippo must travel through the maze of Tubular Bells turning the tiles as he goes. Avoiding the gliding aliens that appear to hinder his quest.

Collect icons to gain extra power and bound over the star-spangled black holes to avoid being suspended and zapped of a life.

Gyrate the whole maze to transport to the next level – The vegetable garden, where the pursuit is even more adverse! Available for the C64. Price: £2.99.

The Caped Crusader

The Caped Crusader returns to the computer screen in an arcade adventure game produced by Ocean Software. Based on DC Comic's character, Batman has been designed in association with the Special FX software development house.

The game simulates a comic strip, with a series of screens superimposed over each other with a cartoon-style script. These reveal Batman's latest battles with his deadly rivals the Penguin and the Joker. Armed with his Batarang, a customised version of the famous Aussie weapon and a magic utility belt, Batman sets out to clean up life in Gotham City. There are two separate adventures within the game, and the player adopts the role of Batman.

There is a Joker sequence where Batman's faithful sidekick Robin gets kidnapped, and the Joker leaves a trail of bombs around the rollercoaster and merry-go-rounds. Defeat the Joker by defusing the bombs, and eventually rescue Robin.

Price: For the Commodore 64/128 version, £9.95 cass £14.95 disk. A version for the Amiga (RSP £24.95) will be released very shortly.

Contact: Ocean Software Limited, 6 Central Street, Manchester M2 5NS, Tel:061 832 6633.

Basic 8

Free Spirit Software Inc. has entered into an agreement with Walrus Software Inc. whereby Free Spirit shall publish Basic 8, a graphics programming system for the Commodore 128 computer.

Basic 8 is a programming enviroment for the Commodore 128 (or 128D) computer in 128 mode with 80 column graphics display. Basic 8 adds over 50 new graphic commands to standard C128 Basic. Basic 8 allows 640 x 200 resolution in monochrome and 640 x 192 resolution in 16 colours without any additional hardware. Basic 8 even permits drawing in a three dimensional enviroment. Commands are included for windows, fonts, patterns and brushes. A RunTime Library, which allows programs written with Basic 8 to run without Basic 8, is included.

The version of Basic 8 to be published by Free Spirit Software has been revised and updated. The package includes a two disk set containing the Basic 8 language, RunTime library, demonstration programs such as Basic Paint, Basic Calc, Basic Write, utilities and a new 200 page instruction manual.

Price: $39.95. Contact: Free Spirit Software Inc., P.O. Box 128/58 Noble St., Kutztown, PA 19530 (USA) Tel:215-683-5609.

Freedom of Press

Freedom of Press version 2, a package that allows Postscript files to be printed on ordinary dot matrix and ink jet printers, is now available in the UK from Milton Keynes based Ctrl Alt Deli.

The upgrades include colour drivers for low-cost colour printers.

Freedom of Press 2 supports Hewlett-Packard PaintJet, Howtek Pixelmaster and 24-pin dot matrix machines from AMT, Fujitsu and NEC with colour kits. It comes complete with 35 fonts, and depending on the printer, can achieve resolutions of between 144 and 360 dpi. It runs under MS-DOS on PC/AT, PS/2 and 386 compatibles.

Price: £375.

Plain Paper Ink-Jet Printer

Mannesmann Tally has claimed a breakthrough in ink-jet technology with the recent launch of a new machine capable of printing onto any type of paper.

Called the MT91, the 136 column printer uses a new ink formula and printhead mechanism which allows rapid drying, yet prevents ink clogging the head.

The company predicts that the MT91 will help raise the company's UK share of the ink-jet market to 10 percent within 12 months.

The MT91 is capable of printing onto plain paper from 52 to 81 g/m² and up to A3 size. Other features include clog free ink, power-on cleaning, autocapping of nozzles and ink empty sensing.

The MT91 offers users dual print speeds of 220 cps (high speed) and 110 cps (high quality). Resolution is 360 dots per inch, while IBM Proprinter emulation is offered as standard. It comes with an auto sheet feeder as standard, a Centronics parallel interface and a noise level of below 45 dBA.

Options available include, NEC P7 emulation slots for additional font cartridges, RS-232 serial interface and a pin feed tractor device.

The printer's head life is 100 million characters (high quality mode) and twice that in high speed mode. As such, the cost of ownership will be significantly lower than other comparable technologies.

Price: £795.00.

Contact: Mannesmann Tally, Molly Millar's Lane, Wokingham, Berkshire. Tel:(0734) 788711.

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MICE!

A new mouse series, available in English, French, German and Italian, was announced today by the European Sales Headquarters of Dexxa International in Geneva Switzerland.

The Dexxa™ Mouse is aimed at users of IBM PC, XT, AT, PS/2 or compatible systems.

The mouse includes its own driver software that makes it compatible with virtually any mouse-based software. It has a software-adjustable resolution from 50 to 750 counts per inch.

Other features include Dexxa Menu™ :pre-programmed pull-down menus for many popular applications, including Lotus 1-2-3®, WordPerfect®, Supercalc®4 and Symphony®. It also allows users to make their own menus for keyboard based applications, making the most efficient use of their existing software.

The company claims that they guarantee a switch lifetime of 5 million operations, against the 100,000 offered by most manufacturers.

The standard Dexxa Mouse includes all the above features and connects directly to a 25-pin serial port.

The Dexxa Mouse DLX connects to both 9-pin and 25-pin serial ports, and also comes in a bus version which leaves the port free for other peripherals. It also includes a mouse pad and one or both of Dexxa's powerful graphic application programs: Paint It!™ and CCS Designer™.

The Dexxa Mouse is available now through all good peripheral suppliers. Prices start at $60.

Contact: Dexxa International, Rue de la Gabelle 9, CH-1227 Carouge/Geneva, Switzerland. Tel:(+41)(0)22 43 79 76.

DEXXA MOUSE
DEXXA MOUSE·DLX
DEXXA MOUSE·DLX BUS VERSION
Leaves Your Serial Port Free

Training on screen

We have heard reports that businesses in the UK will this year spend nearly £7bn on training materials, and that one per cent will be spent on high technology courses, such as computer programs or video disks.

Companies such as Britain's largest building society, the Halifax, argue that it produces better qualified staff for less money.

The company says that staff in 750 branches have had to learn about more than 100 new services, including mortgages, insurance, personal loans and credit cards.

In total, this year, the Halifax will have spent £5.2m on hardware and software to train 15,000 staff.

So far it conducts: computer-based training, where a program stored on a personal computer (PC) disk instructs and tests students who respond via the keyboard; and interactive video systems, where a combination of video pictures and computer graphics is stored on a laser disk, which is used with a PC. For example, the Halifax is developing a disk to educate staff about the current account service which it will launch later this year.

Chip Experts Meet

The International Solid State Circuits Conference (ISSCC) gathered to discuss the evolution of the computer into the 1990's.

The chip experts unveiled the key components of the next decade's computer systems: silicon technology is far from running out of steam; all semiconductors might at some point be usurped by superconductors or devices that rely upon different electrical phenomena; and the use of computers to design chips has become a critical factor in the ability of semiconductor manufacturers to develop more complex designs. The days of the "hand-crafted" chip are disappearing.

Many of the advances described at the ISSCC will not emerge in commercial products for two or three years. An exception however, is Intel Corporation's latest microprocessor, which the company has recently launched.

More chip news

Fujitsu, a Japanese firm, has recently announced that it has succeeded in manufacturing a one-chip microprocessor which runs at 37 times faster than current silicon-based devices but consumes 200 times less power.

Basic 8 Toolkit

Free Spirit Software Inc. has released Basic 8 Toolkit, a utility program for use with the Basic 8 hi-resolution graphics development system for the Commodore 128 computer.

The Basic 8 Toolkit features a point and click operating system that allows the user to create custom Pointers, Fonts, Patterns and Icons. The Toolkit also allows the user to convert Print Shop Graphics into Basic 8 graphic files. Colours may be added to the Patterns, Icons and Print Shop Graphics with the colour option. The Toolkit also contains a set of useful disk utilities such as make autoboot, convert icon file to brush file, scratch file, rename file, validate disk, toggle drive, directory and format.

Files created with the Basic 8 Toolkit can be used in custom programs, Basic 8 programs or with graphic programs such as Sketchpad 128, Spectrum 128 or News Maker 128.

Price: $19.95. Contact: Free Spirit Software Inc., P.O. Box 128/58 Noble St., Kutztown, PA 19530 (USA) Tel:215-683-5609.

STOP PRESS!

Database sees the recent acquisition of manufacturing rights to two C64 products as a vote of confidence in the Commodore 64 marketplace.

The titles – Stop Press (£39.99) and Stop Press and mouse (£69.99) are two established C64/128 DTP packages that originate from AMS.

"Whereas some software houses seem to be deserting this market, this is certainly not our intention", says Chris Payne.

Cable Distribution Box

MDS Industries (UK) Ltd, has introduced its new range of Cable Distribution Boxes, providing centralised control and easy access to all data networks serving a multiplicity of office terminals.

The standard range of Cable Distribution Boxes comes supplied complete with 25-way female 'D' type connectors, range RS232, or with BNC bulkhead fittings for IBM coaxial systems. The panels are hinged within a wall mounted cabinet for easy access to all connectors. The cabinet itself has a lockable front door for total security and a document holder for network plans. All connectors are assembled to the mounting panels at MDS's factory in Hemel Hempstead.

The Boxes, supplied in a standard IBM beige colour, are available in 16-way, 24-way and 32-way units, within the following stock range:

PAND16: 16 way unit D25 – Female connectors. PAND24: 24 way unit D25 – Female connectors. PAND32: 32 way unit – Female connectors. PANC16: 16 way unit BNC – B/Head adaptors. PANC24: 24 way unit BNC – B/Head adaptors. PANC32: 32 way unit BNC – B/Head adaptors.

All units measure 395mm wide, 440mm high, 330mm deep.

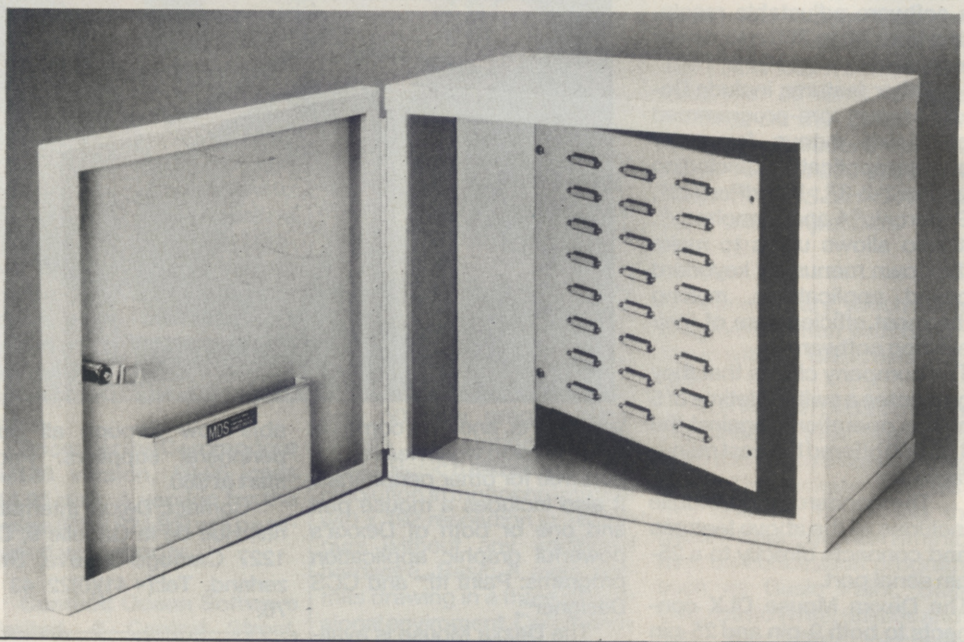
The products are available either as standard items from the MDS catalogue or they can be custom-made to a company's own specifications as part of the free design service available from MDS.

Contact: MDS Industries (UK) Limited, Factory No. 1, Ebberns Road, Hemel Hempstead, Herts HP3 9QS, Tel. 0442-231305.

Microprose sign rights to U.M.S. II

Microprose have announced the signing of worldwide rights to Universal Military II. The simulation, to be known as UMS II: Nations at War, is being developed by a team from Intergalactic Development Inc. headed by Ezra Sidron, the author of the original UMS. Working in conjunction with Intergalactic will be Ed Bever, formewr Microprose team leader for Gunship and a Doctor in History at Princetown, who will be responsible for the research into UMS II and will be preparing combat logic and Artificial Intelligence routines with Ezra.

UMS II: Nations at War, will be available on the Commodore Amiga, and IBM PC and compatibles, and release on all formats is planned for August 1989. Price points have yet to be fixed.



The Digitising Amiga

Trilogic has announced the release of the Amiga Stereo Digitiser, fully compatible with AUDIOMASTER, PERFECT SOUND & PROSOUND etc. The DIGITISER connects directly to the headphone socket of your personal stereo, hifi or portable keyboard with the lead supplied. No software is included in the price, but for those who don't already have software, a Public Domain disk with 'cut down' versions of AUDIOMASTER & PERFECT SOUND is available for £4.99, alternativley, the impressive PROSOUND by Eidersoft can be bought separately for £34.95, or just £30.00 if purchased with the Digitiser.

Supplied with connecting lead & instructions, the AMIGA STEREO DIGITISER is now available by return of post for just £37.99 inc vat & postage.

Contact: Trilogic, Unit 1, 253 New Works Road, Bradford, BD12 OQP. TEL 0274-691115.

Video Catalogue System

Software Visions, Inc. unveiled a new video appliaction using its Microfiche Filer Plus database program at the World of Commodore show. A video scene catalogue was demonstrated in which the user selects scenes for display, using information found in a Microfiche Filer Plus database. The scenes are then displayed on a standard Amiga monitor with a single keystroke. The system consists of Microfiche Filer Plus, Arexx, Intercative Microsystems Mediaphile infrared controller, a videodisk player, and a genlock.

The video scene cataloguing system, the first step in a video editing system, was designed to communicate easily with other applications, said a spokesman who put together the catalogue.

Contact: Software Visions Inc., P.O. Box 3319, Framlingham, Massachusetts, 01701. Tel (617) 875 1238.

DELUXE PAINT 3 SUPPORTS THE AMIGA LIGHT PEN AND DRIVER

Inkwell Systems, has recently announced the release of their New Amiga Light Pen and Driver, which features compatible support for Electronic Arts Deluxe Paint 3.

Inkwell Systems tells us that Electronic Arts has solved the difficulties which kept Deluxe Paint 2 from being 100 per cent compatible with the Amiga Light Pen and Driver.

Suggested retail price for the Amiga Light Pen and Driver is $129.95 Dealer/Distributor discounts are available. Inquiries for more information can be directed to INKWELL SYSTEMS, 1050-R Pioneer Way, E1 Cajon, CA. 92020, (619) 440-7666 or by Fax (619) 440-8048.

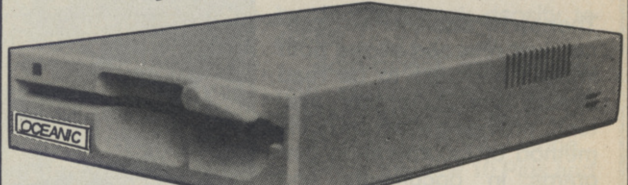
Evesham Micros

All prices include VAT/delivery

OCEANIC OC-118

NOW WITH NEW 'JIFFY DOS' !

Previously sold as 'Excelerator Plus'



A superb package representing extremely good value for money, combining the Oceanic OC-118 disk drive (previously sold as 'Excelerator+') and the sophisticated GEOS system. Said by COMPUTE's Gazette to have "dramatic improvements over the 1541 in quality and reliability", the drive is a stylish and attractive compact unit featuring a direct drive motor and its own external power supply. GEOS brings the power of a graphic interface and integrated disk turbo to your '64 and includes geoPAINT, a graphic workshop, geoWRITE, a WYSIWIG word processor and many Desk Accessories. Many more extensions available - see below.

Oceanic OC-118 & GEOS £129.95

Oceanic OC-118 & GEOS plus *Freeze Machine* £149.95

GEOS Applications

GEOS 64	£24.95	GEOPUBLISH	£32.95
GEOFILE	£24.95	GEOPROGRAMMER	£32.95
GEOCALC	£24.95	GEOS 128	£32.95
DESKPACK+ 64/128	£21.95	GEOWRITE WORKSHOP 128	£32.95
GEOWRITE WORKSHOP	£24.95	GEOCALC 128	£32.95
FONTPACK+ 64/128	£16.95	GEOFILE 128	£32.95
GEOSPELL	£16.95		

star LC-10

Best-selling CBM ready printer

Now the established market leader in this price category, the LC-10 incorporates many advanced features for such a low price. Its facilities, not normally available in this price range, include 4 NLQ fonts (with 96 combinations) and paper parking (use single sheets without removing tractor paper). Good value 7-colour version also available, which will also accept standard LC10 black ribbons. LC10 available either in '64/128 ready form or as parallel version for Amiga users. Please state your computer type when ordering.

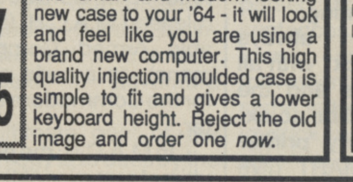
Only £199.00

Colour version also available,

Only £249.00

Prices include two extra black ribbons free of charge

GET THE SLIMLINE '64



Only £19.95

Your '64 could look like this! Why put up with an old fashioned looking computer? Fit this smart and modern looking new case to your '64 - it will look and feel like you are using a brand new computer. This high quality injection moulded case is simple to fit and gives a lower keyboard height. Reject the old image and order one *now.*

FREEZE MACHINE for speed, power and ease of use

- ☐ **Unstoppable Freeze**
- ☐ **Fast save routines**
- ☐ **Ultra-efficient file compactor**
- ☐ **Lazer and Turbo fastloads**
- ☐ **Integral reset button**
- ☐ **Tape turbo facilities**
- ☐ **12 second disk format**
- ☐ **Selective file copier**
- ☐ **Selectaload**
- ☐ **many more useful features!**

Only £28.95

For speed, power and ease of use it has to be Freeze Machine, probably the most effective backup cartridge on the market! Incorporating two types of fast load routines you can SAVE and reLOAD your favourite games in as little as 10 seconds and no more than 18. Numerous invaluable facilities available, including a built-in reset button. Utility Disc V3.0 also available to complement usage of the cartridge. It allows complete transfer to disk of many tape-based programs that load extra parts, eg. Gunship, Last Ninja, World Games, Supercycle. A very useful add-on.

Utility disc only £7.95

FREEZE
RESET
FREEZE MACHINE

Selected Products

DOUBLER '64 ...... Makes perfect tape backups every time. Consists of hardware and software. Requires access to two data recorders. Very easy to use, only **£12.95**

ICONTROLLER ...... Natty little keyboard mounted cursor controller, ideal for icon-driven applications like GEOS **£11.95**

DATA RECORDER ...... CBM compatible, same as C2N/1531 but cheaper and includes pause control button **£24.95**

DOLPHIN DOS ...... Parallel operating system for use with 64/128 and 1541 disk drive. Fantastic speed increase on LOAD and SAVE whilst maintaining CBM disk format. Many extra DOS & BASIC commands, includes built-in monitor and Centronics printer driver **£69.95**

DISC DISECTOR V5.0 ...... Disk backup/utility package, very powerful **£19.95**

1541 PHYSICAL EXAM ...... Consists of digital alignment disk and drive fault diagnosis software to check and correct 1541 head alignment. Includes quiet drive stops **£39.95**

1541 QUIET DRIVE STOPS ...... Silences 'knocking' noise with 1541 drives **£4.95**

AZIMATE 3000 KIT ...... Kit to check and adjust data recorder head alignment **£6.95**

AMIGA 500

SPECIAL OFFER AMIGA PACK

Contains Amiga 500, TV modulator, Mouse, Joystick, Mouse Mat, 5 disks of public domain software, 'Photon Paint' and 7 top games ('Karate Kid II', 'Goldrunner', 'Grid Start', 'Demolition', 'XR 35', 'Atax' and 'Las Vegas'). Total retail value of extras supplied is £270.45.

All this for only £399.00

Philips CM8833 (Colour monitor suitable for Amiga 500) **£229.00**

Philips CM8852 monitor as above, but higher resolution **£299.00**

Cumana external 5.25" floppy drive 40/80 track 'Transformer' compatible . **£159.95**

Disks & Boxes

25 bulk packed 5.25" DS/DD disks with sleeves, write protect tabs and labels. Good quality and fully guaranteed, only **£13.95**

25 disks + box. Disks as above plus 50 capacity lockable storage box, only **£22.95**

25 disks + 100 box. As previous offer but with 100 capacity locking box **£24.95**

50 capacity box. Lockable storage unit for 5.25" disks with smoked perspex top **£10.95**

100 capacity box. Larger version **£13.95**

How to order from Evesham Micros

Phone us with your ACCESS or VISA card details on :
☎ 0386-765500

All prices include VAT and delivery. Express Courier delivery £5.00 extra.

✉ *Send cheque, Postal Order or ACCESS/VISA card details*

Govt., educ. & PLC orders welcome
Same day despatch whenever possible
All goods subject to availability, E.&O.E.
Open to callers 6 days, 9.30-5.30

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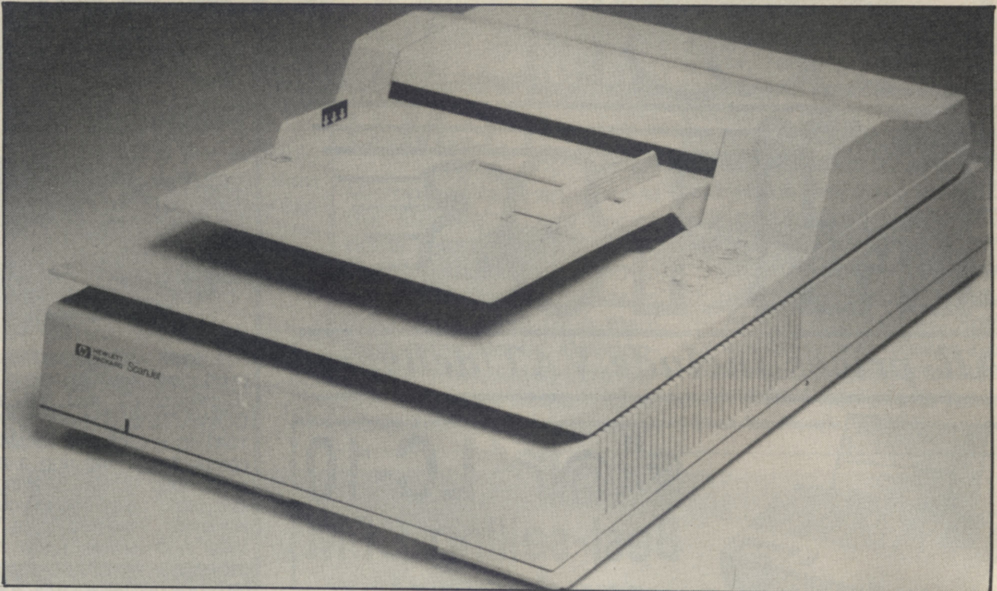


The new HP Scanjet Plus Scanner, just released allows both images and text to be read directly into computer systems, providing a fast and easy method of incorporating diagrams in documents and copying OCR text into computer files.

Available from Action Computer Supplies at substantially below recommended list price, the Hewlett Packard Scanjet Plus has interface kits available for HP Vectra, IBM XT and AT, IBM PS/2 and Apple Macintosh.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel:0800 333 333.

The Last Inca

Free Spirit Software Inc. has released The Last Inca, a graphics/text adventure for the Amiga series of computers.

In The Last Inca, the player is a young Incan Warrior chosen by his people to seek the Crown of Power. The player must find the Crown before Zulphosi, an evil wizard who was once held prisoner on Galapagos. Zulphosi wishes to use the Crown to destroy the Incan people. In the player's journey, he encounters many challenges. Only the most skillful of warriors can survive the Sacred Mountain, home of the Great Condor. The player will find traces of the forgotten civilization of the Megaterras. What secrets do they posses? It is rumoured that the Emerald of Xiahuxi is hidden within the Caves of Doom. What terrors are hidden there? The lives and hopes of his people depend upon the player as The Chosen One. Price: $39.95.

Norton Utilities Update

The newly-released Version 4.5 of Norton Utilities standard package includes four entirely new programs for file recovery; a facility for context-sensitive help; and a new reference manual. Of special interest to non-expert users is 'Safe Format' which replaces the DOS format command with an alternative claimed to be both faster and safer.

The standard version, in either 3.5in or 5.25in format, is offered by Action at £50.00 (compared with £65.00 RRP), or reduced to £45.00 at Action's special £100+ discount price.

The Norton Utilities Advanced Edition 4.5 offers all facilities of the Standard Edition, plus two new features. These are the Norton Disk Doctor, which automates both analysis and repair of damaged disks and the Norton Troubleshooter, which provides step-by-step procedures for solving many of the more frequently encountered disk problems.

The Advanced Edition, in either 3.5in or 5.25in format, is offered by Action at £85.00 (compared with £99.95 RRP), or reduced to £79.00 at Action's special 100+ discount price.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel:0800 333 333.

Star Printers

Following extensive field trials COMPUMART, the Loughborough based mail order company, are to add two of the STAR range of printers to their range. Presently, they offer Citizen and Panasonic models.

The first offering is the LC10 mono. It has a specified Draft speed of 144cps and an NLQ speed of 36cps, a 4K internal buffer and both IBM and EPSON emulations.

Next is the LC10-Colour. Same specifiction as the mono but by using a four colour ribbon you can achieve a seven colour print. Of course you can use a plain black ribbon for normal printing.

COMPUMART always offer a "starter pack" with all their printer range and the STAR LC series will be no exception. With every printer ordered COMPUMART give FREE next day delivery and the "starter pack" consisting of 1000 sheets of paper, an interface cable to connect the printer to your computer and an additional spare black ribbon, worth over £30.00.

Contact: Compumart, 3 Cranmer Street, Nottingham NG3 4GH.

M.A.C.H.

Free Spirit Software Inc. has released M.A.C.H. (Maneuverable Armed Computer Humans), an arcade style game for the Commodore 64 computer.

In M.A.C.H. the player is the ultimate warrior of the future, a M.A.C.H. The player's armour-plated body is equipped with deadly hand rockets. As enemy invaders swarm over the city, the Mother Ship releases the player to battle wave after wave of obliterators, destroyers and other nemeses. The player flys over the city in search of bands of enemy agents. After one type of agent is destroyed, the enemy spacecraft release a new type of agent to attack the player's city. From time to time, the player must return to the Mother Ship to rearm, replace armour and recharge fuel cells. Price: $29.95 (US).

SPArch

SPArch is a parallel processing scientific & engineering software package for the Transputer, which has been developed by the University of Glasgow in conjunction with MicroWay (Europe) Ltd.

It is designed to run on large networks of Transputers. The package consists of 15 modules, each of which is available separately if required.

SPArch was written specifically for the MicroWay MultiPuter range of Transputer networks. A MultiPuter with 19 T800 Transputers will typically process these routines one to four times faster than a Cray supercomputer.

Contact: MicroWay (Europe) Limited, 32 High Street, Kingston-Upon-Thames, Surrey, England, KT1 1HL. Tel:01-541 5466.

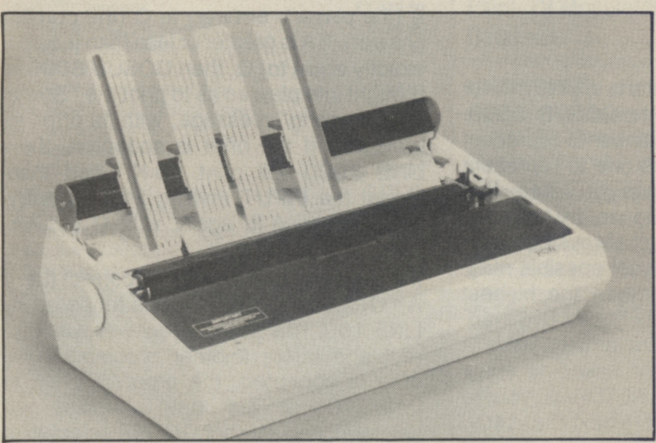
Margin-Maker

MaxaFit – clip on accessory for most 'typewriter' style computer printers – is available now from SBS Computer Supplies. MaxaFit provides the correct alignment for single sheet and continuous stationery.

This unit clips in and out of most wide and narrow carriage printers and width fittings, fore & aft positioning, paper feed and calibrated print width scales are all fully adjustable.

Once MaxaFit is fitted the paper stack or continuous stationery is simply placed between the paper guide arms which have been set where required and printing can begin. Even multi-pass or multi-colour printing is straightforward due to the perfect position locks and integral paper support.

Price: £25, Contact: (mail order exclusively) SBS Computer Supplies, Victoria House, Vale Road, Portslade, E. Sussex BN41 1GG. Tel:0273 423523.



High Density Disk Drive

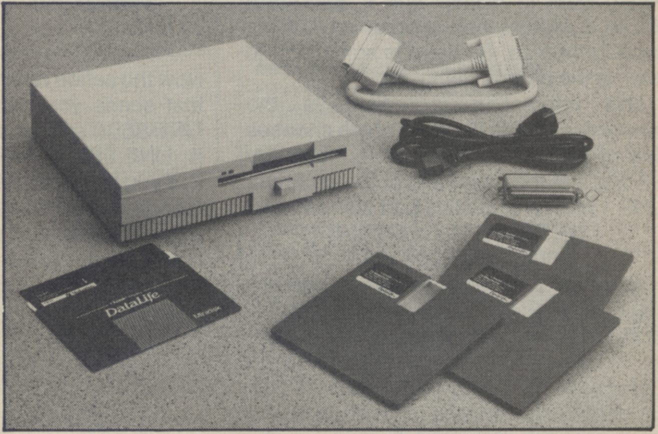
Verbatim has announced further developments in its range of High Density Disk Drive Subsystems. Verbatim will now offer two drive options – 10Mb internal or external and 20Mb internal or external. A new feature of the external drives is a slimline box designed to fit neatly between PC and Monitor.

The 20 Plus drive has been developed from the 10 Plus and uses 5¼" servo embedded 20Mb media. The capacity increase over 10Mb is achieved by doubling track density to 666tpi.

Both ranges are available with 'channel kits' to enable use with IBM PC's and compatibles and IBM PS/2 range.

Price: the new 10 Plus and 20 Plus drives are expected to retail at £450 and £675 respectively in external form.

Contact: Verbatim Limited, 13 Mole Business Park No.3, Leatherhead, Surrey KT22 7AQ. Tel:(0372) 377555.



Dondra and Questmaster™ Series

MicroIllusions has announced that it has purchased the publishing rights to Dondra – A New Beginning, and will be producing all further installments in the Questmaster™ series. Dondra – A New Beginning is the first in this new graphics/text adventure series.

The ultimate goal of the Dondra Trilogy is to destroy the occupying evil (under the leadership of Colnar), and restore the world of Dondra to its rightful position as a leader of a peaceful universe.

In book one, the objective is to find the Crystal Prism of Heheutotol. The player does this as the last of a warrior race called the Tellasiens. User interface is rendered painless by the highly sophisticated word parser that allows the use of full sentences, multiple commands and even multiple movement executions all in the same set of instructions. The joystick may also be used to enter movement commands.

The scope of the game is communicated visually as well. Over 100 original pictures and more than 30 animated sequences bring the adventure to life. There are "Cartoon style" graphics and a unique zoom-in effect allows the player to dig deeper with close up views of many objects. The first person perspective puts the player right in the middle of the action.

The quicker the character obtains objects and completes the quest, the more experience points received. Once the quest has been completed, all experience points may be transported into future Questmaster™ modules. It is possible to play again and again to build the best score for transporting.

Dondra – A New Beginning is available for Commodore 64. Price: $49.95.

Contact: MicroIllusions, Tel. 818/360–3715 (USA).

Now THAT'S Access...

Corporate Computer Security, especially in finance, is crucial to maintaining the proper working system. But surprisingly not all systems are foolproof. The latest apalling example is the case where a teenage cashier defrauded the National Westminister bank out of almost £1 million.

Tim Fox, a 17 year old computer whizz set up his own bank account and paid himself £12,000 in imaginary cheques creating money out of "thin air".

Fox also transferred another £984,252 into the account of a schoolfriend. And it was only after Fox, of Norbury Crescent, Norbury, South London, told his employer he had stolen £12,000 that the transfers were discovered.

2.3 Gigabyte Tape-Streamer

Specialist networking distributor ADT has announced that it has been appointed sole UK distributor for the 2.3 gigabyte tape streamer produced by the giant Dutch consortium Borsu. Borsu is based in Weesp, the Netherlands, and has operations throughout the world.

The most you could save onto any tape streamer was 150 megabytes; being able to store 2,300 meg means that, in practice, you can sensibly use one tape streamer to back up a sizeable network on a single cartridge, ADT tell us.

The Borsu drive uses 8mm VHS video tape – wider than the conventional 'quarter inch' – and works on 'Helical Scan' rather than 'Serpentine' technology.

Price: £5,750 for either the PC/AT or PS/2 MCA version. Tapes cost £25 each.

Contact: ADT Ltd., Austen Road, Clifton Moorgate, York, YO3 8XA. Tel:(0904) 692069.

'POLYMATH'

'Polymath' means a person of varied learning. Peter McDonald helps you to vary your math skills.

The dictionary says that "polymath" means a person of varied learning. This program will hardly make you that. What it seeks to do is to develop varied skills in maths. And it also introduces a feature not used in any of my earlier offerings. So there is something to learn in the programming, too.

This interesting ingredient is the randomised GOSUB, a line which chooses one of several GOSUBS at random. You will find it at the beginning of the program: LINE 140. The operative part is:

ON RND(1)*4+1 GOSUB
1000,2000,3000,4000

This really means "Make a random selection of GOSUB 1000, 2000, 3000, 4000". It is an odd command: you will find it on p.57 of Rae West's "Programming the Commodore 64" (Level Computer Publications) in the Revised (1987) Edition. It works, of course, equally well on the C128 in 128 mode, as in the present program.

When I first saw it, I wondered how one could ever use it to good account. Presumably (I thought) only in a game, because there is no business application or utility where one would wish to select a GOSUB at random. I in the end wrote a rough and ready game, in which the player is a U-Boat Captain, and has to face the varied trials and opportunities thrown up by a series of random GOSUBs within GOSUBs, Sometimes he could choose from a list of options. But tacked on to them were the random GOSUBs so that no two missions were the same, except by accident. Ultimately I lost interest, though GO, SUB! would have been a wonderful punning title for it.

This is what I evolved in a more serious and useful vein.

1. **LINE 10 clears the screen: defines FNC(X) so that GOSUB 7500 can center the phrase (it keeps changing) represented by the variable P$ for printing on screen. It also sets GOSUB 8500 in motion but we'll look at that later.**
2. **LINE 9500 only comes into operation if the answer to the query in LINE 7000 is not "Y". It starts the signing-off routine completed in LINE 9510.**
3. **When you have entered this program, save it as "POLYMATH". Then RUN it. If all is well, there is nothing further to do. But if it does not run correctly, look for the error, correct it, and then simply type "GOTO 9999". This will save and replace the program for you.**

Now the action **really** starts in LINE 10, for that sends you away to GOSUB 8500. LINE 8500 selects a number to represent R; LINE 8600 chooses one to represent Z. If you look at these lines you will see that though numbers are chosen, by the computer, at random, R must always be larger than Z because the lowest possible number for R is 1 higher than the highest possible number for Z. These two (randomly selected) numbers form the basis of whichever sum you are asked to solve mentally. LINE 8600 RETURNs you to LINE 10 and thence to the next line, 140.

LINE 140, as we have seen, will send you to one of four GOSUBs. You will go on that journey with the numbers representing R and Z already selected for you as a consequence of your diversion to LINES 8500, 8600 and back. The (randomly chosen) GOSUB will decide whether the calculation you perform with numbers R and Z is a multiplication, addition, subtraction, or division sum.

Let us imagaine that GOSUB 1000 is randomly selected by LINE 140. The first LINE of each GOSUB has as its main purpose the definition of Q. Why? Because Q is the correct answer to the calculation in each case, and it is against Q (see LINE 150) that the answer given by the player is checked. GOSUB 1000 is the multiplication 'module', so if the play er is going to be asked to multiply the two randomly selected numbers (R and Z) then Q (the answer to this sum) is going to be:

R*Z

and that is why LINE 1000 says that Q= R*Z

But the question has not been put to the player yet! The second line of the GOSUB (in this case LINE 1020) does this. In effect it says:

MULTIPLY R BY Z.

However, before the player has time to type anything, LINE 1020 has brought GOSUB 9000 into operation. That prints (as an INPUT):

WHAT IS YOUR ANSWER

just below the question. Whatever figure the player types in answer to the INPUT is designated. A. LINE 9020 does a RETURN: to LINE 1020, which in turn RETURNS to LINE 150. LINE 150 compares A (the player's answer) to Q (the correct answer). If A is greater or less than (i.e. not exactly equal to) Q, then GOSUB 8000 is brought into play, so as to print the "Sorry! You're wrong" message, with its offer to try again. If the offer is accepted, then LINE 8020 will print "O.K." and then repeat the INPUT, inviting another entry and comparing it, again, with Q in LINE 150.

If the answer to the INPUT is correct (i.e. if A=Q) then GOSUB 7000 is triggered by LINE 160. This says the answer was correct and offers another problem. If the offer is accepted, the program goes to LINE 10, so that new variables are selected, and another GOSUB selected at random by LINE 140.

Apart from minor differences in the wording of the problems, GOSUBs 1000, 2000, 3000 and 4000 are similar except in their first lines. The first line in each case defines the answer to the problem and the figures to be used in it. In GOSUB 1000 all is straightforward. But in GOSUB 2000 a variation is introduced. Remember that GOSUB 8500 chooses the figures R and Z at random. But the numbers are chosen within narrow limits. For multiplication that is in order. Most of us would have to exercise the grey matter to multiply (say) 17 by 7. But if we were asked to **add** those two figures, the task would be too simple. So LINE 2000 redefines R and Z by multiplying R by 11 and Z by 7. This would make the problem require the answer to 187 + 49 (which is not quite so easy).

Similar adustments appear in LINES 3000 and 4000.

GOSUB 3000 deals with subtraction. Again, the numbers need 'beefing up' so that the problem is not too simple. Here there is the added complication that we want R to be larger than Z (because we do not want a message like:

SUBTRACT 27 from 11

to appear on the Screen). So we redefine R as R*7, and Z as Z*3, Q then equals R-Z (as redefined), and that cannot be a minus quantity.

Again, in the case of GOSUB 4000 we do not want to be asked (say) to divide 3

continued on page 48

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SPECTRUM 128

Bob Collyer tells you how to achieve the very best graphics that the C128 has to offer.

First things first. This is NOT a Spectrum emulator! When I first saw this package I thought that I was going to be able to run all my mates "Spekky" progs on my C128. Better than that, this is a graphics tool of the highest quality, something much more useful than running "Spekky" stuff and something that all C128 users have been waiting for.

I have seen the wonderful graphic capabilities of the amazing Amiga, I have seen all 4096 colours, the only trouble is that most of them, in my mind, were green. . . . . That is to say that I was green with envy! Now, hold your breath, because this program will allow one hundred and twenty eight beautiful colours to be displayed on the C128!

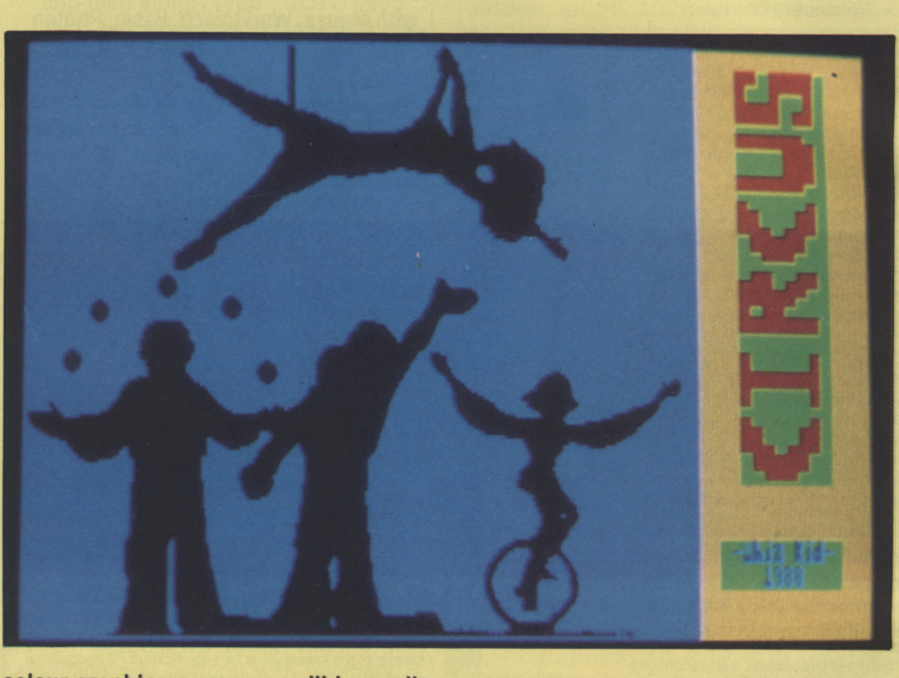
There are four things necessary to enable you to get use out of this program. You will need the 64K video chip, a 1751 drive, also the use of a 1351 mouse and an 80 column monitor, all are essentials. So if you have not yet purchased these items, "GET THEM!". If you don't you will miss out on this incredible utility capable of the very best graphics that the C128 has to offer.

Have you ever fancied having your pixels dithered? . . . . silly question . . . . 'cos you should have. Spectrum 128 was created using the Basic 8 Graphics System.

> ***"Due to the special nature of the 80 column graphic screen, all 16 standard colours and the 128 dithered colours can be displayed at the same time."***

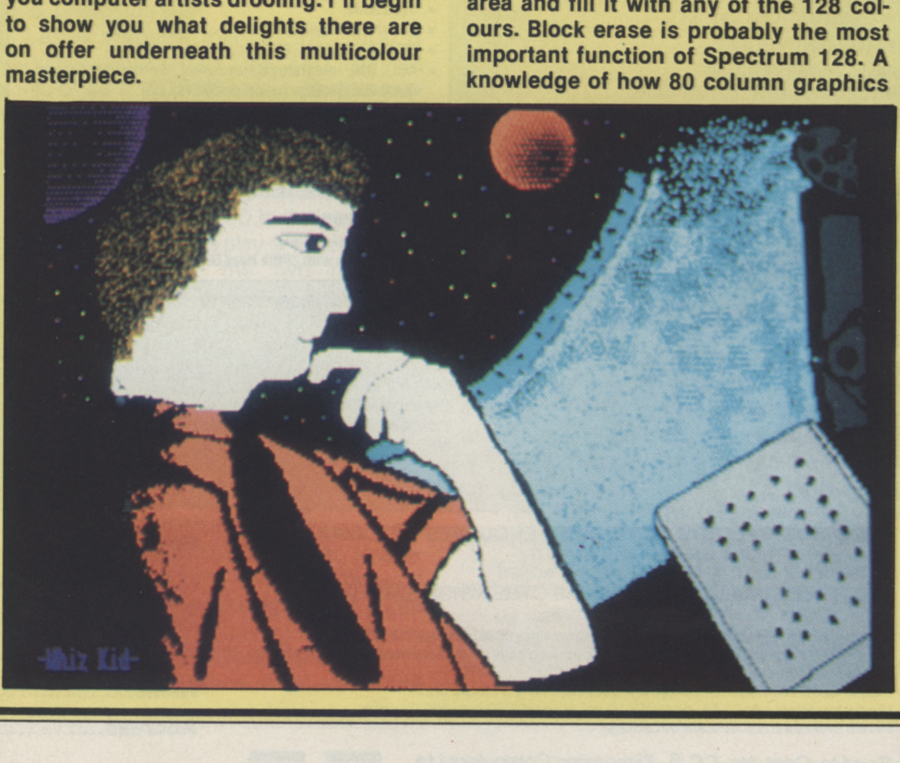
Due to the special nature of the 80 column graphic screen, all 16 standard colours and the 128 dithered colours can be displayed at the same time.

Colour bleed is minimised due to the small colour cell size of the 8x2 pixels.



A resolution of 640x200, twice as good as the resolution found in other colour graphics programs, will have all you computer artists drooling. I'll begin to show you what delights there are on offer underneath this multicolour masterpiece.

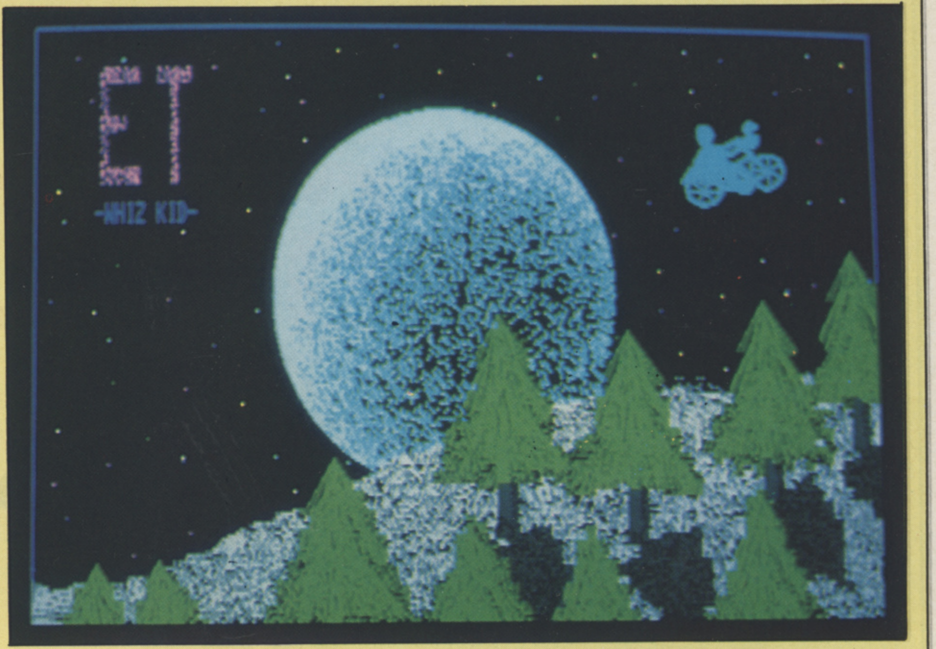
"Block fill" lets you create a boxed area and fill it with any of the 128 colours. Block erase is probably the most important function of Spectrum 128. A knowledge of how 80 column graphics



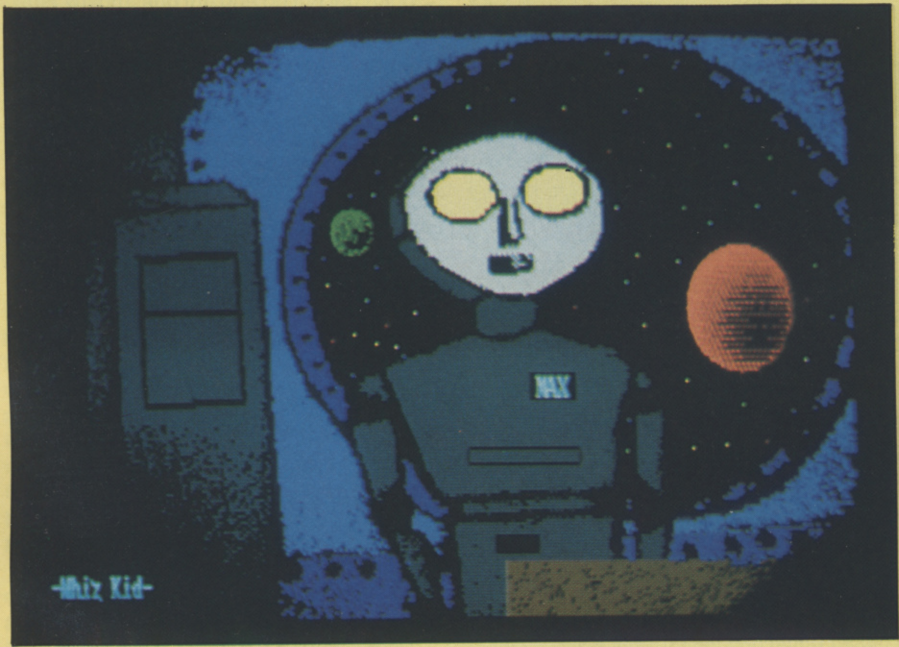
work will enable the user to maximise the best effects possible, using block erase actually sets every pixel in a given rectangular area to a new background colour thus creating a small drawing screen within your picture. Inside this block you can use any colour at your disposal just as you can on the regular screen. With this technique cleverly utilised over many small areas on the overall picture, you can avoid any colour bleed through to other areas resulting in perfect pictures.

Other options from the menu bar available are Dots, Line, Lines, Rays, Boxes, Circles, Polygons and preferences over thickness of lines and multi-height drawing such as automatic 3D effects. Solids can be created for example you may draw a solid sphere, doughnut shape, spool or cylinders. These are shaded in to give a solid result. The shading may be in a choice of a rough texture or a smoother halftone effect. Lighting may be from the front side or back light.

All the usual cut and paste options also reside in the top level menu making it easy to cut out pieces and drop them back in again in another position. Fill with a wide choice of fill patterns from the data disk supplied. Write text onto the screen using any of very many fonts in many sizes from the data disk. Text may be modified by altering the size or the height independently from the width for short-fat or tall-thin effects.



"Multicolor, when selected offers the wide choice of 128 different colours. With this option you may paint with pixel blocks of 8x2 (in other words 80 blocks wide by 100 deep)."



LET'S PAINT

The main screen contains a menu bar at the top which is switched on with the right button on the mouse, here a choice of all the main options are available. Firstly to paint, a single pixel width freehand line in any of sixteen colours is available, an airbrush will spray textures over your work easily and quickly.

A mirror effect gives a kind of kaleidoscope pattern on the screen. Pixels drawn up in the top left hand corner are simultaneously drawn for you in each of the four opposing corners and as you move the mouse around beautiful symmetrical effects are easily created.

Multicolor, when selected offers the wide choice of 128 different colours. With this option you may paint with pixel blocks of 8x2 (in other words 80 blocks wide by 100 deep).

'You can mirror or flip text even reverse it or write your text using a current pattern."

You can mirror or flip text even reverse it or write your text using a current pattern.

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MORE 64 POWER!

Explore the many exciting possibilities of the C64 in the first part of a new series by Peter Gerrard that gets you tapping into the power of your 'much more than a games machine'...

The Keyboard

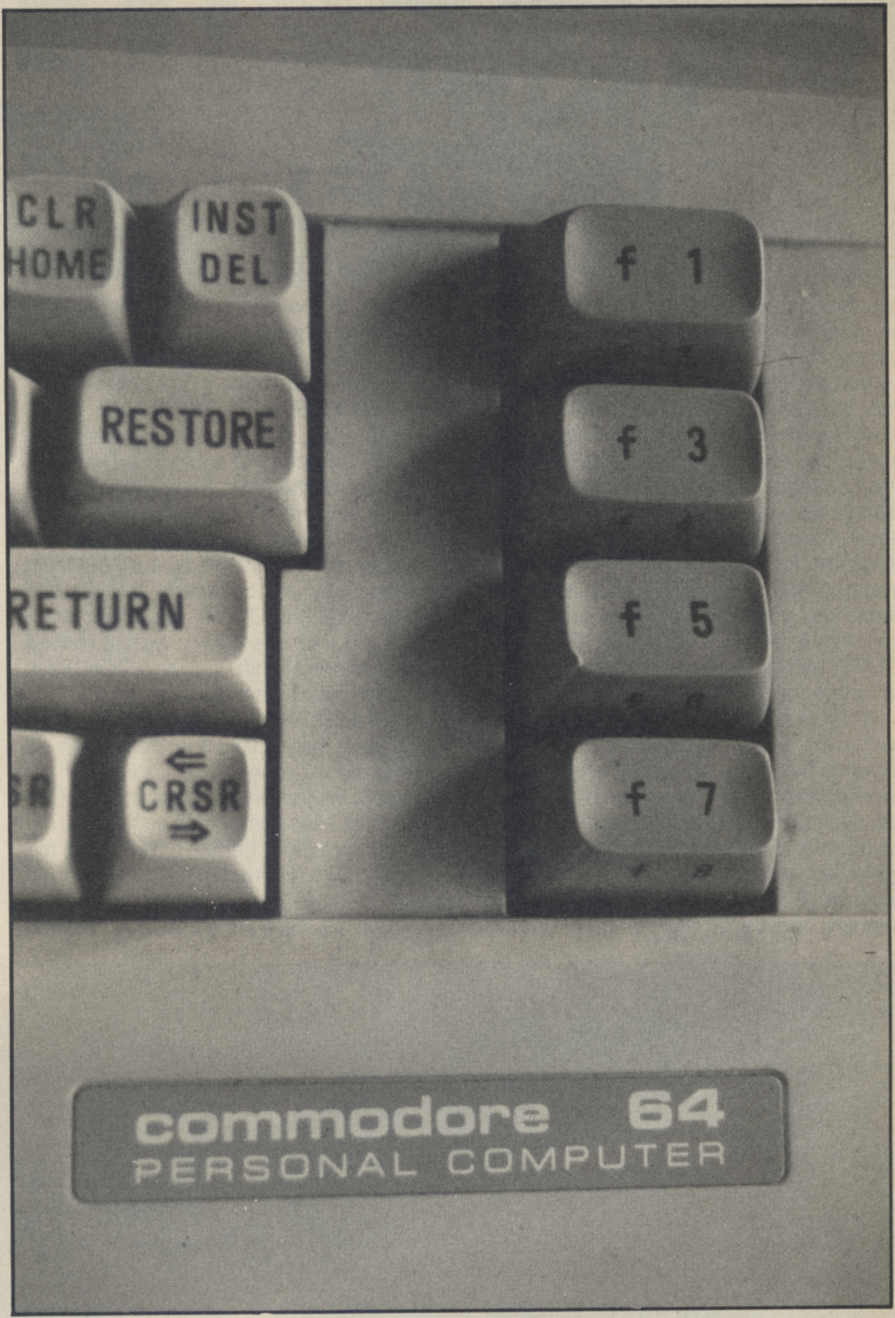
As John Mullowney, my fan from Cheshire, said in the letters' section of the April 1989 issue of Commodore Computing International, "I didn't buy my Commodore 64 computer to play games on, it's a waste of a darned good computer." Quite right too, John, although of course there is nothing wrong in playing games if that's your reason for using the computer in the first place. I still drag out the International Soccer cartridge now and then and thoroughly enjoy trying to be the Bryan Robson of the computer world.

However, there is much more to the Commodore 64 than that. In this series of articles we aim to explore as many aspects of the 64 as possible, and since the only way that most of us will ever communicate with the beast is via the keyboard, what better place to start than that? Even if you do only play games, you still have to enter the commands to load and run them, and a lot of games do require you to input some sort of instruction from the keyboard, so we'll begin our tour of the 64 with a look at the 66 keys that it possesses.

You'll notice, if you look at the keyboard, that most of the keys have more than one symbol on them. Some (the letter keys, mainly) have three symbols on them, and when you first turn the computer on the main symbol is achieved simply by pressing that key, the one on the right hand side is reached by pressing that key in conjunction with one of the shift keys (it doesn't matter which), and the one on the left hand side is gained by pressing the key whilst holding down the one over on the left that has the CBM logo on it. Commonly referred to quite simply as the logo key, if you type in the letters CBM without pressing any other key, then hold down either shift key and press the logo key at the same time, the display will flip from being upper case only to lower case. The letter CBM will become cbm.

If we now proceed to type various letters they will come out in lower case, and only by holding down one of the shift keys and typing a letter will we be able to produce upper case characters. In this lower case mode we lose the right hand symbol on the letter keys but keep the left hand one. This can easily be demonstrated by tapping the Q key, tapping it again with either shift key held down, and tapping it once more with the logo key held down instead.

This shift to upper/lower case as opposed to upper case only can be achieved from within a program by the command POKE 53272,23 or by PRINT CHR$(14): to get back to upper case only, we use POKE 53272,21 or PRINT CHR$(142). But what, you may ask, is to prevent people holding down either shift key and pressing the logo key so as to spoil your nice screen display by flipping back to upper case only? The command PRINT CHR$(8) is the cure for that particular disease, but if you want to be able to use the two keys in this way then PRINT CHR$(9) sends the keyboard back to normal.



In order to enter commands such as these POKEs and PRINTs we have to press the RETURN key to get the computer to accept and act on the instruction presented to it. This RETURN key is arguably the most important one on the 64. Without it, we cannot get the computer to accept a Basic instruction. You might think "ahah! Put a RETURN instruction into the keyboard buffer (more on that later) and that will do the trick." How do we instruct the computer to do this? By pressing the RETURN key, or entering a program line to do the same thing. The only way to enter a program line is . . . yes, press the RETURN key, so without it we're not going to get very far in our tour of the 64.

You will have noticed another key on the keyboard, one with the word CONTROL on it. CONTROL sounds more important than RETURN doesn't it? Alas, the CONTROL key is not the one that enters commands, it has other uses.

One of these is to change the colour of the letters that we type in from the keyboard. Pressing CONTROL and 1, for instance, will change the colour of our letters to black, CONTROL and 2 changes it to red, and so on. Other colours apart from the eight labelled on the numeric keys can be obtained by holding down the logo key and pressing 1, 2, etcetera. To see these colours more effectively we might wish to use what is termed reverse print mode. That is, instead of all the little dots that go to make up a character (you can see them if you peer closely at your television or

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MORE 64 POWER!

monitor) being turned on and all the background ones being turned off, the situation is reversed and the character dots are turned off and the background ones turned on. There are various ways of doing this, but one is to press the CONTROL key down and press the 9 key. Tapping the space bar now will show what I mean. If you change the colour in the manner described earlier and press the space bar again, the change in colour becomes more apparent. To leave this reverse print mode you can hold down CONTROL again and press the 0 key. From within a program, you might PRINT CHR$(18) and PRINT CHR$(146) to turn reverse mode on and off respectively.

What else does the CONTROL key do? Not a lot, really, although it is useful in slowing down the speed at which a program is listed onto the screen by pressing it whilst the listing is being displayed. Also, its presence can be detected within a program by looking at the content of memory register 653. There are two principal memory registers used by the 64 when storing key presses, 653 is one of them, and 197 is the other. We'll be looking at 197 in more detail in a moment, but if we stick to 653 you could type in a program line like the following:

```
10 PRINT PEEK(653);: GOTO 10
```

When RUN, the number 0 will be displayed over and over again. This indicates that none of the keys recognised by this register is currently being pressed. However, if you press either of the shift keys the number will change to a 1, pressing the logo key will change it to a 2, and pressing CONTROL will change it once again, this time to a 4. Try pressing various combinations of shift, logo and CONTROL together to see what happens.

The RESTORE key over on the right hand side has little use other than to (sometimes) reset the computer if pressed in conjunction with the CONTROL key, I say sometimes because a) my Commodore 64 is getting a bit old and the key has to be thumped rather than tapped on occasions when it's feeling a mite contrary, and b) there are ways of preventing this from within a program. A straightforward POKE 808,225 will do the trick, but do remember to POKE 808,237 to set things right again if you're only using it from within a fairly simple program; you might have forgotten to set a way out of the program, and if you can't break into it your only resort is to switch the computer off and on again.

Breaking into programs is usually done with the RUN/STOP key, but it does have other uses. You may well be familiar with programs supplied on tape that require you to press shift and RUN/STOP in order to load and then automatically run those programs. The same cannot be done for disk, unfortunately, other methods have to be resorted to. It only applies to tapes.

We mentioned location 197 earlier, and that can be used in a similar way to location 653 in order to detect various keys being pressed. If you change the value from 653 to 197 in the little one line program given in that earlier discussion and run the program again, you will see the number 64 being continually displayed. Pressing various keys will change that number, and we can now begin to make use of the four function keys over on the right hand side of the keyboard. Pressing function key one (F1, as it is usually denoted) will give the value 4, for instance. All the function keys can be detected in this way, although as with seemingly most things on the Commodore 64 there are other ways in which their

continued on page 24

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presence can be picked out from within a program.

To do this we'll need to use the GET command, as in:

```
10 GET A$: IF A$ [ ]CHR$(133) THEN 10
```

The other function keys (use shift to get another four values, but the logo key doesn't alter anything) all have their own CHR$ numbers associated with them, and these can be found easily enough by slightly modifying the one line program given above and extending it so that a variable is used to find the ASCII value of the key being pressed. That number can then be printed out and all the function keys quite happily detected from within a running program.

Again going back to something mentioned earlier, we reach the topic of keyboard buffers. First of all, what exactly is a keyboard buffer?

Well, when you type something in at the keyboard it has got to be stored somewhere for later use. The 64 can't peer at the screen in the same way that we do, and although the screen is memory mapped (in other words, anything that appears on the screen is stored in the computer's memory somewhere – perhaps surprisingly, not all computers do this, some relying on the keyboard buffer to the exclusion of anything else), the 64's operating system doesn't scan the screen every time you press RETURN and enter a command or program line.

Instead it looks at its own keyboard buffer. If there's a number in front it treats it as a line of a program and doesn't bother checking it for errors. This is something that the 64's designers could possibly have added, so that your line is checked for things like syntax errors immediately it is entered. It would save Basic programmers a lot of hard work, but on the other hand you might learn more about programming with things left as they are.

However, if there isn't a number at the start then the 64 assumes that what you've typed is a statement for immediate execution, and it tries to do just that by using its various ROM routines and telling you if you've done something wrong. A simple syntax error, for example. Otherwise it obeys the command.

Access to this internal buffer is not that straightforward, so fortunately for us the 64's designers added another one that we can play about with. It's not very large, but we can store a few carriage returns in it, for instance, and produce some interesting effects. To do that we need to know where it is in memory, and in fact it starts at memory location 631 and continues upwards for a while. I'll leave it to you to find where it ends! In order to use it we have to tell the 64 how many characters of whatever sort we've put into this buffer, and we use memory location 198 for this: the location one beyond that which tells us and the 64 what key has been pressed in our earlier example.

In order to see this working in a program, the following routine might be of use if you want to re-run a program for some reason:

```
1000 PRINT
"[CLR,CD,CD]RUN[HOME]";
1010 POKE 631,13:POKE 198,1:END
```

The symbols in brackets are interpreted as "press the clear screen key (shift and CLR/HOME) then the cursor down key twice, type the letters R-U-N, then press the cursor home key". If you were to just enter these two lines on their own and type RUN, then you'd have to break into the program by pressing the RUN/STOP key in order to stop program execution, otherwise it will just run and run.

Plenty of other applications exist for this technique, like loading and running a program from disk by having two carriage returns in the keyboard buffer and POKEing location 198 with a 2: use POKE 631,13:POKE 632,13 at the start. Of course, you'll have to work out the position of everything on the screen first!

That concludes our whistle stop tour of the 64 keyboard, and in next month's instalment we'll be exploring another aspect of this very popular computer that is so very much more than a game-playing machine.

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AmiEXPO '89

A second bite at the Big

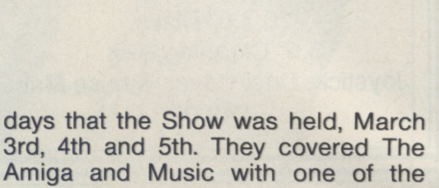
Anthony Mael finds the Amiga is becoming big time show business on Broadway …

It was not the first time that the Amiga had taken a bite at the Big Apple. New York was the place where the very first AmiExpo saw the light of day in October 1987. The success there encouraged the organisers to go on to Los Angeles and Chicago. And although those swinging cities may be some people's kind of towns, there is no place anywhere like New York, New York. It is after all so good they had to name it twice …

So the fifth AmiExpo returned and this time appropriately it was at the huge Marriot Marquis hotel on Broadway and it was the big time … The highest number of attendees so far at an AmiExpo crowded in — over 14,000 and that must surely be the largest number of Amiga users ever to come together in one place. And the 80 plus exhibitors made it the biggest yet gathering of Amiga suppliers too.

As usual, the main event was accompanied by Master Classes where experts held forth for the benefit of Amiga users hungry to extend themselves and their machines. This time however, suitably for anyone interested in the American theatrical tradition of nearby Broadway, the classes took place in evocatively-named halls such as the O'Neill, Odets, Wilder and Miller rooms. I am sure that those world famous playrights would have appreciated equally attentive audiences, for the Amiga users not only crowded the halls but listened rapt to keynote speakers led by Gail Wellington, CBM's popular General Manager for Software as well as Master Classes in the Amiga as a Pro Video Tool; The Art of Amiga Art, held by Jim Sachs renowned as probably the world's leading Amiga artist with such achievements as Defender of the Crown; and The Amiga in C which focussed on both the Amiga architecture and the fundamental concepts of its operating system as well as AmigaDos and file and process management.

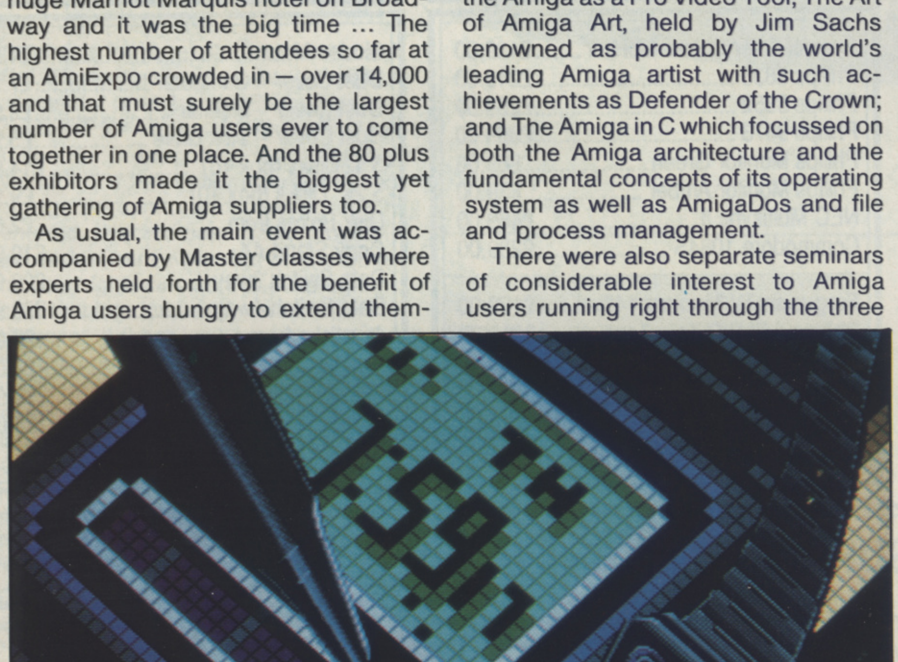
There were also separate seminars of considerable interest to Amiga users running right through the three days that the Show was held, March 3rd, 4th and 5th. They covered The Amiga and Music with one of the speakers from the notable stable of Dr T's Music Software; Amiga Hardware Expansion, where the speakers included Perry Kivolovitz of ASDG and John Griffths of memory and Storage Technology.



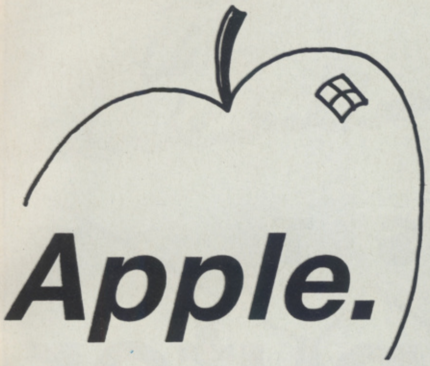
Other seminars were on Amiga graphics, Amiga video, The Art of using the CLI, Amiga and Animation and Amiga Desktop Publishing, whose speakers included Deron Kazmaier from Soft Logik.

It was this last company, not the most familiar to Amiga users that created one of the biggest sensations of the Show not only by wearing as badges a scorched and distorted 3 1/2 inch disk bearing the legend "I burned my Pagesetter! Ask me why!" If you did request the reason for this act of computer arson, the reply was obviously connected with the launch at the Show of the long-awaited Pagestream DTP package. Never heard of it? Not surprising for it was announced several AmiExpos ago as Publishing Partner Plus. It looks, under its new name, set to challenge Gold Disk's Professional Page as the leading Amiga product in the field — and it is priced at $199, some $100 cheaper than Pro Page.

Several other interesting products were introduced at the Show including Turbo Silver an upgrade of an already highly reputed 3D program and B.A.D.



The pictures shown here are selected from award-winning Amiga art



ig Apple.

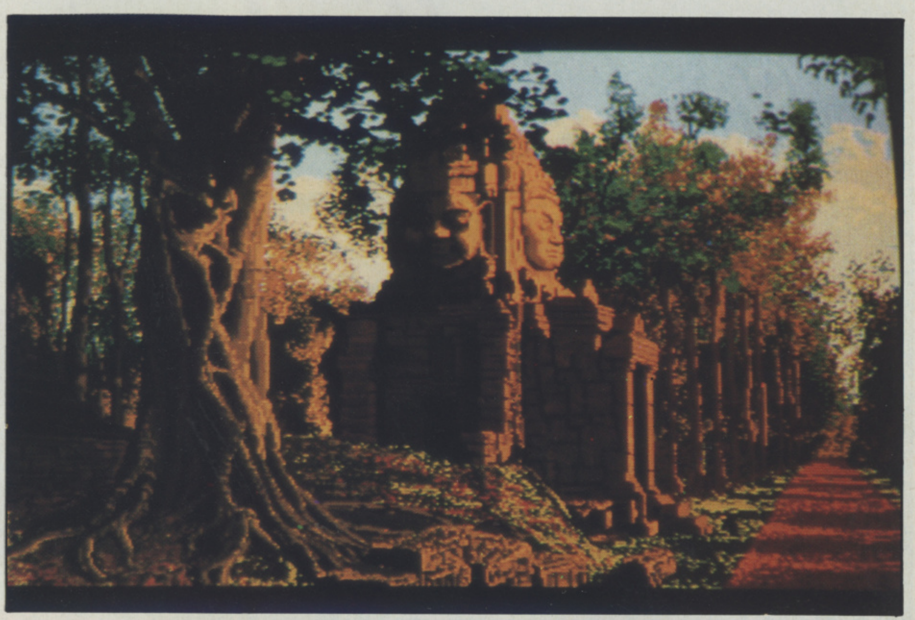
No, Michael Jackson had not hit the Amiga Show scene. This is a neat little program claimed to speed up disk access 500% and also offer a number of other goodies at a very economical price. Psygnosis, who were represented by their American company and Microdeal, probably the European software house closest to the U.S. anyway — they are based in Cornwall! Microdeal have some interesting products under development including a highly sophisticated package which is really a highly creative games writing tool that will be published at a very attractive low price within the reach of everyone.

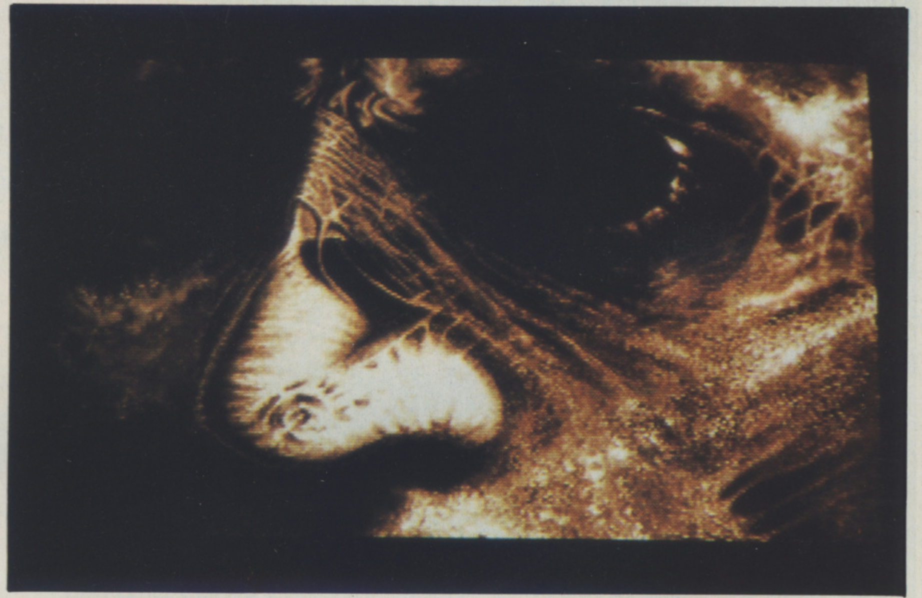
The majority of Stands were not, however, concerned with games at all. Clearly in the U.S.A. the Amiga is not, as in Europe, being offered largely as a games computer. The greatest part of the products displayed were of 'serious' use, with video predominating and many products, including a preview version of Newtek's Video Toaster taking pride of place. Newtek promises (yes, they have promised before!) that it will be out within a month or so. But doubts are being expressed that PAL version is a practical proposition.

For any European used to Commodore Shows where the predominant age group is largely in the early tens, the audience at the New York AmiExpo would have been a surprise, for the attendees were generally well into their twenties and frequently owners of A1000 or A2000s rather than A500s. There were even beginning to appear users of the recently released A2500 — yet to reach European markets. The A2500 will appeal to the power users, the people who need two or three megs and hard disk speed for professional applications. That was the audience for the New York AmiExpo, power users, big spenders, people for whom the Big Time is a natural habitat.

Where better to hold a show for them than on Broadway, the heart of the town that made Show Business what it is, New York, New York. So good AmiExpo came there twice …

A.M.





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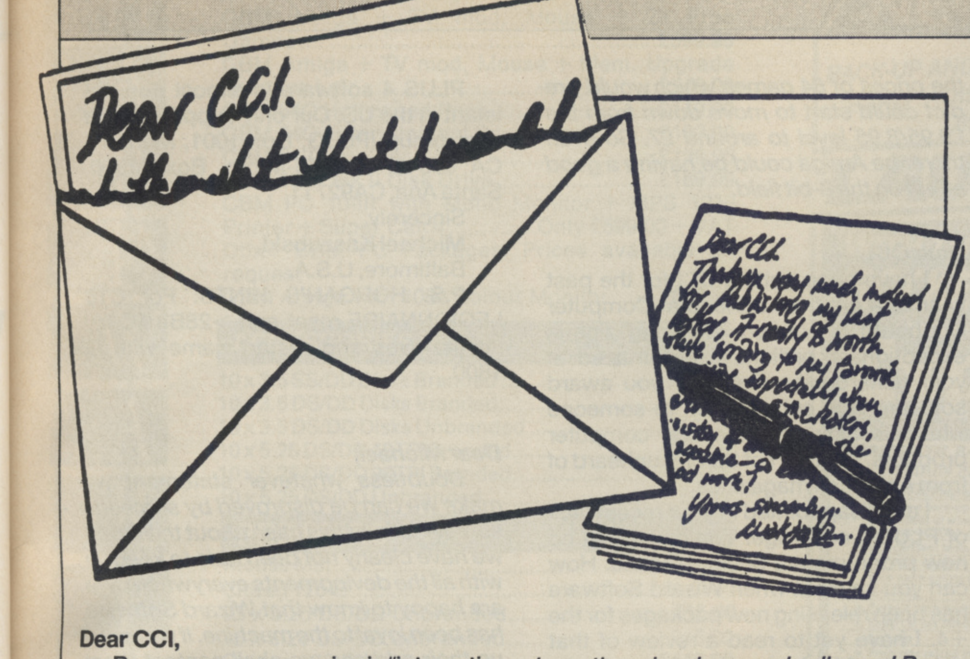

Dear CCI,

Because your magazine is "international" it would be convenient if you could print the current Rate of Exchange for the countries you circulate your magazine in.

Almost all of the Mail Order Advertisements in your magazine are based on the £. This makes it difficult for those of us who think in terms of American $. A price guide would be most helpful!

The price of your mag in the U.S. is $4.50 U.S. Dollars. There are many magazines in the U.S. of similar (or better) quality that I can buy for only $2.00. If your price wasn't so high you would sell a lot more!

I hope you consider my suggestions,
Thankyou,

Aaron Bluod,
Florida, U.S.A.

P.S. A response would be appreciated.

Dear Aaron,

We have had many unusual letters in our time, but yours is certainly different to any we have had before.

CCI goes to some 60 countries worldwide including, of course, the U.S.A. and even Russia – where one of the major libraries has a subscription. For us to include the current exchange rate for all of them would turn us into a Financial Times or Wall Street Journal! One of the problems is that these days exchange rates see-saw so quickly that a monthly magazine would always be out of date. But we can tell you that the dollar/pound rate remains roughly the same, give or take a few cents at $1.75 to £1.50; you can work out the cost of mail order without too much trouble. However, it may not do you much good for our experience has been that prices in the U.S. are generally lower than in Europe. As for your point about our $4.50 price in the U.S., we have no control over retail prices outside of the U.K. The price includes the substantially greater transport costs but it is up to the American distribution channels what price they want to charge. We would be happy to keep the price down and sell more! Possibly the way around this is to take out a subscription and get CCI sent direct.

Dear CCI,

As a CBM +4 owner I would welcome your views on where we should be setting our sights for the future, assuming of course that we stay loyal to CBM.

This is not an invitation to plug Amiga once again but an attempt to salvage a considerable investment, expand on knowledge in the absence of software, and utilise those elements of hardware which are compatible with later (fully supported) computers.

My set up consists of the following:–
TWO CBM PLUS 4's (one in reserve)
One each: 1570 and 1551 Drives.
MPS 803 printer fitted with Printkit IV and tractor feed; Philips Green Monitor.

Obviously it would be a very costly business to update my complete outfit and as an O.A.P. this is out of the question anyway.

Coming back to the Amiga or for that matter the CBM 64 can you advise me whether my peripherals could be utilised with either of these machines?

Additionally, am I right in believing that the Amiga 500 has been modified or altered in some way from the original version (precluding the use of some software) although in my understanding the CBM 64 remains as originally produced (except for the case)?

On reflection the PLUS 4 is an excellent machine, good for writing the odd letter to CCI or my MP, good for a game of chess but it would be nice to teach myself flying or even typing instead of driving myself round the bend with Zork. So where do I go from here?, not being a ZAP man.

Come to think of it is it beyond the wit of computer buffs to market a CBM 64 mode software package for +4 to increase their sales of 64 software to PLUS 4 types?. Your views would be most welcome.

Yours sincerely,
George Barker, Hants.

Dear George,

The question is what do you want to use a computer for? In your case, it means a Plus 4 (or rather two, does that mean you are a Plus 8 owner?) which is a perfectly good computer for many uses. It cannot run C64 software (yes, I know, we should all shout 'shame!') but if you want it to write letters on or run a database application, it has 64K and is a first class machine for those purposes and many others. With one in reserve you could go on for years without worrying using it. However, like all of us (O.A.Ps or not) you are no doubt influenced or even pressured into thinking that you should have the latest technology whether you need it or not. It might be the Amiga or a PC but why even think about it if your present computer is adequate for your needs? Mosts businesses have been convinced to buy PCs when for 80% of the time they are only used for wordprocessing. A simple dedicated wp would have been a better answer.

If you do go ahead and purchase some other computer, almost certainly you will be able to use your printer and monitor but not, we are sorry to say, much else.

As for changes in the Amiga and the 64, Commodore doesn't make most of the things it sells. It subcontracts the manufacture of a substantial part of all its machines – lie nearly all computer companies. Frequently changes are made, and have certainly been made to both the original manufacturing specifications of both machines. These changes are generally not enough to affect the performance of software or peripherals, although in several cases we have heard of, games or peripherals have failed to run on some 64s. CBM always deny they have changed anything. But as the young lady in the film about the Profumo scandal says "Well, they would, wouldn't they?"

Dear CCI,

I read, with interest, the editorial in your February issue which praises the technical advances made in 64 prodcuts which, you infer, have been in the shadows of the Amiga.

Whilst the fact that 6502 programmers are driving their machines to the limits is laudable, surely it does nothing more than hide the fact that the efforts of their 68000 counterparts must be less so.

You cite the example that "64 Thunderblade is at least as good as the Amiga version" and put this down to excellent programming. Whilst, it is in part, true, the Amiga is a machine of infinately greater technical capabilities, and so the same amount of programming expertise should produce a far superior product. You will no doubt reply that programmers are only getting used to the Amiga, but software houses continually justify price

cont. on next page

continued from page 29

tags of £25 by the extra programming wffort required on the 16-bits. If their technical capability has not yet matured, perhaps they should consider reducing their prices until it has?

The fact of the matter is that it is sound business sense to exploit whatever opening is available, and people like me will pay £25 if we have to. Therefore, I am just as guilty as any software house. However, in earning that £25, I worked to the best of my ability. I think it is only fair that the programmers do the same.

Yours faithfully,
Paul Robertshaw,
South Yorkshire

P.S. Keep the Jeff Minter column. Now there's a guy who always did try his best...

P.P.S. My tee-shirt size is extra large!

Dear Paul,

We live in a society, at least this side of the Iron Curtain, where prices are set by the seller who will try to get as much as the market will bear. So far the Amiga market has borne the usual £24.95 price tag for games quite well. But cracks are beginning to appear. There is now a growing amount of software being released at £19.95 and we have heard that U.S. Gold are planning to bring out some games, if possibly not their big coin-op licences, at £14.99. This could also have an effect on the prices of 64 games which would predict could start to move down from the £9.95/8.95 level to around £7. So even there the Amiga could be having a good effect on the 8-bit field.

Dear CCI,

I have been getting CCI for the past year as a gift from a friend at Computer Cupboard in London. The magazine is exceptionally brilliant. I am amazed at your generousity whenever you award software or a subscription to someone who has difficulty obtaining computer products. That sort of thing is unheard of from American magazines.

I am disappointed in your recent lack of PLUS 4 coverage. You claim that no new programs are being released. How can you say that when Wizard Software has been releasing new packages for the +4. I have yet to read a review of that program of their excellent Super Sprite utility which adds smooth scrolling sprites + new Basic commands. Wizard offers a limited, yet wide variety of high quality +4 utility software. As a result, I have sent my own review of WISP is hope that you may print it.

My only other complaint is that my subscription is running out and I shall not be able to renew it as the cost would be $80 (you can subscribe to FOUR magazines over here for that price).

PLUS 4 software is almost non-existant in the US. Our only suppliers are a user group (PLUG, Box 1001, Montery, CA 93942) and Tri-Micro, Box 11300, Santa Ana, CA92711.

Sincerely,
Michael Kaszubski,
Baltimore, U.S.A.

P.S. HORGAN'S HINTS: For C16 LEGIONNAIRE reset and >28B8 4C for infinite lives and restart game with G 1800.

Dear Michael,

Doubtless whatever statement we make we can be disproved by someone somewhere. In this case about the Plus 4 we have clearly not been able to keep up with all the devlopments everywhere. We are happy to know that Wizard Software has been loyal to the machine. If you send us their address we shall contact them and get a copy of WISP and if our opinion agrees with yours in the review you have sent us then we shall print it, pay for it and give you a complimentary subscription on top for your good detective work on behalf of Plus 4 owners. And also for the addresses of the Plus 4 suppliers which will be very useful.

And you think that CCI is 'exceptionally brilliant'. You are obviously a man of taste and judgement!

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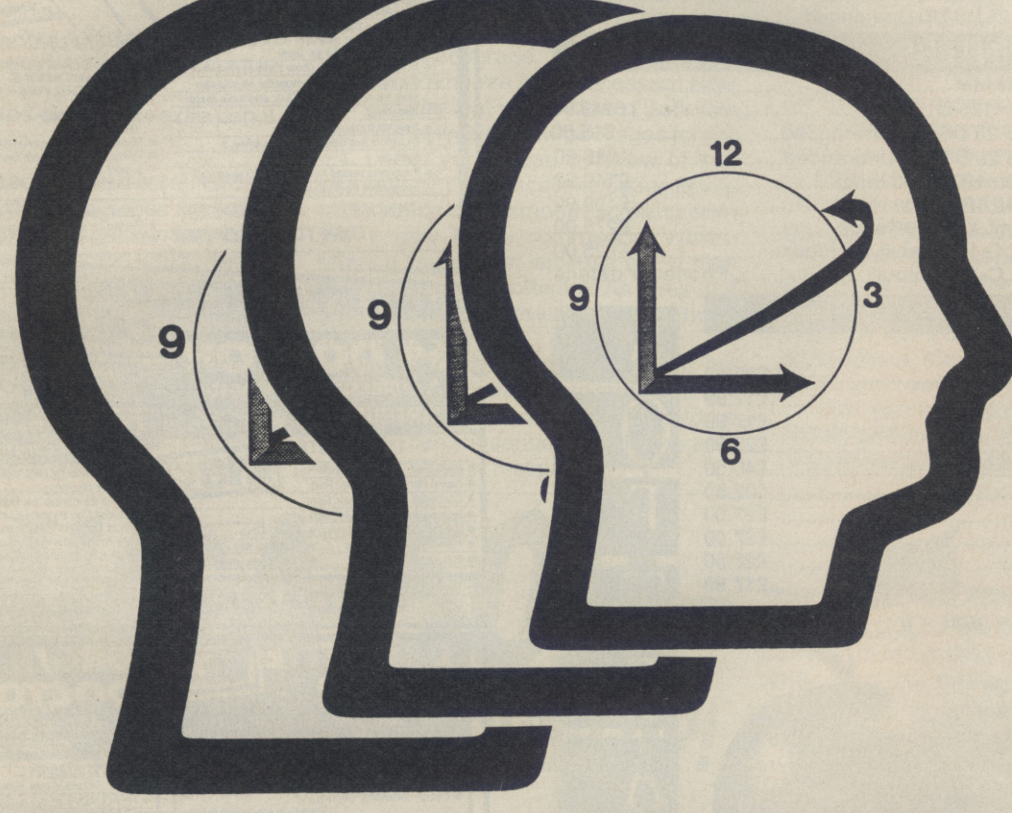
PROJECT PLANNER



Have you made any good plans lately? I mean really good plans such as buying a new house, starting up a new business or planning to make some home improvements? These are just a few examples of projects undertaken by thousands of ordinary people everyday, but how do they do it?

Quite often you may have a bright idea but the whole project is seemingly too large to handle with too many critical decisions to be made so the exercise is put off because of knowing just where to start or in which order you should proceed. Well this is just the sort of task that is handled easily by Project Planner. This disk or tape based product is published by Collins Soft and is the second in the Brainpower Series that we have taken a look at, last month it was the turn of Numbers At Work, each title in the series is an original approach to home computing, offering you the scope to learn and apply new skills in business and family life.

Brainpower titles are an interactive way to enjoy learning through the teaching programs and also through the applications programs contained in these packages. You must get the best out of your dear old C64 so why not make it work for you.

Both the disk and cassette versions are accompanied by a stand up manual with all the general topics and aspects fully covered in a manner that is both easy to follow and quickly understood. I will try to explain in simple terms to begin with what kind of problems Project Planner can help you solve.

Buying an Amiga

For instance, if you are planning to be the proud owner of an Amiga one day, just when and how, will be different for each individual, but for everyone the prerequesites (the things needed before you can continue) will all be the same. The decision to buy an Amiga can be broken down into smaller parts which can be handled more easily. Something like this:

1). Finance, do I have enough money or can I arrange enough for all the things that I will need?

2). Which shop to buy if from is the next problem, choosing the right shop which offers the best possible bargain to suit you.

3). Should I get a Monitor? Does it offer a better resolution that is worthy of the investment?

4). Which software in the form of games and utilities will I need to begin with?

5). Do I have enough room at home to keep the machine or can I make the room?

6). The great day comes for me to show off my Amiga. Or will it?

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Even this simple example has six main activities, all of which are related to each other in some way. Take for example activity No. 1). Finance, you would probably think this the most important part of the decision making process but you would be wrong. Take a look at No. 5), without the room to keep the beast you must forget it! This is the most important prerequesite you have so making No.1) dependent upon No.5).

To continue, so we have the room and we have broken into the piggy bank to fund the project then we must then consider action No.3), getting a monitor, have we room and funds and will the extra clarity be worthy of coughing up another couple of hundred pounds for a one? This is also dependent upon No.5) and No.1). Once you are over these hurdles it is time to choose the shop which can give you the best bargain that will suit your particular requirement, this is action No.2). When that is sorted out you can now choose the various programs which you would like to run on the Amiga, you will have seen a few of the fantastic selection of really great software reviewed in this magazine, naturally, but just how much you can afford is reliant upon No.1. Then and only then can you expect the great day to arrive when you can sample the delights that being an Amiga owner can offer.

Project Planner can assist you on this, a simple exercise, but much more importantly on major project decisions that involve many more tasks. We have just covered, what in technical terms is called the Critical Path Analysis. One way to get some sort of visual guide is to put it down on paper as a network. These networks show the relation of each activity to each other and the prerequisites also.

> ***"Project Planner will work out which activity should be performed first and in which sequence the others must follow in order to reach the finishing date on time. This clever little beast can also work out where, if any, you may have time to spare."***

For a project that is time critical you will have to estimate the approximate time it will take to perform each activity. From this Project Planner will work out which activity should be performed first and in which sequence the others must follow in order to reach the finishing date on time. This clever little beast can also work out where, if any, you may have time to spare. The program calculates the earliest possible date and the latest date each activity can take place. This process takes a few moments to work out but will prove invaluable as it maximizes your efficiency, at the end of this Project Planner produces its results in the form of a graph.

Graphs are a good way to present details of a complicated multi–faceted project. Line graphs indicating the duration, earliest start and latest start dates for each activity, make it possible to understand more easily than a network diagram.

Project Planner is full with helpful hints on how to achieve the best order and the best times for any project. Making the best, not only of your working time, but your spare time as well. I cannot think of a better piece of software to help a busy office or club to achieve the best from their projects and at the same time the best out of their C64. As you can see even the most simple problems are not as simple as they first appear. If diagramatic representation of relationships and critical path analysis turns you on, you must get Project Planner.

B.C.

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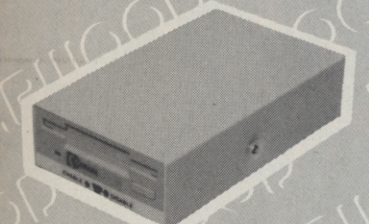

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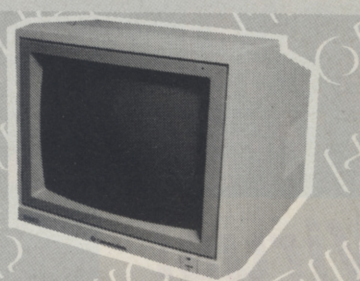

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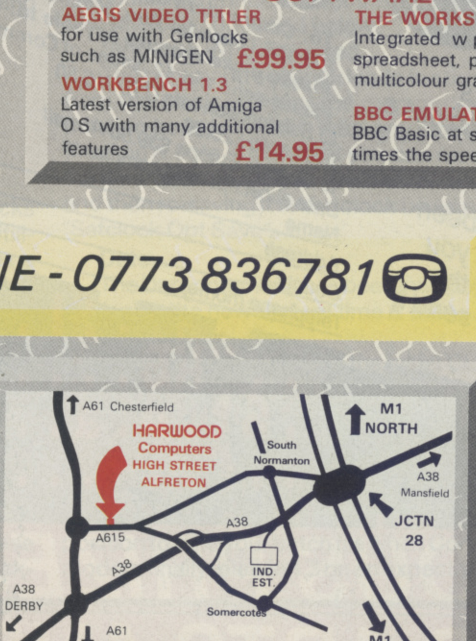

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ICPUG THE AMIGA STARTUP SEQUENCE

In this month's tip, Ken Turner takes you on a quick tour of the Startup sequence.

The first sequence is taken from a copy of Workbench 1.2 which no doubt everyone has seen but may not fully understand. Let's have a closer look at it line by line.

WORKBENCH 1.2

Echo "A500 Workbench 1.2 Version 33.56 23-APR-87*N"

This is the text that is printed onto the screen when the disk is loading. The "*N" introduces a blank line between the next screen message. You may place any text you like on this line such as "Freds copy of Workbench is now loading. Please wait"

Bind Drivers

This command integrates any device drivers you may have in the Expansion drawer into the system for example a plotter and as such can be removed from the startup-sequence if you dont posess such a device. This shortens the loading time by a couple of seconds.

If EXISTS SYS:System
Path SYS:System Add
Endif
If EXISTS SYS:Utilities
Path SYS:Utilities Add
Endif

This portion of the sequence checks for the existence of the System and Utilities directories on your disk and adds a path to them. This has the effect of being able to run any routines in these directories from the root of the disk i.e Format..... instead of System/Format.... You can add more paths to your disk if you wish. If you have deleted these drawers from your disk you may remove these commands and speed up the loading process still further.

Dir RAM:

This forces the system to recognise the ram disk and therefore display a clickable icon on the workbench screen.

Path RAM: Add

This operates the same as the Path commands above.

SetMap usa1:

This sets up the correct "key map" for the keyboard. I find mine works perfectly OK without this command and could be deleted.

Addbuffers df0: 20...

The Amiga disk drives load data into a memory buffer before it can be used elsewhere. If a program is small enough to fit into this buffer, it needn't be recalled from the disk again. There is a memory overhead of 544 bytes per buffer used.

LoadWb

Guess what this does!!

Fail at 30....

this command halts the startup-sequence if the Amiga returns an error code limit of, in this case, thirty. This particular line is included for the benefit of the Setclock command below.

SetClock ›NIL: Opt Load.....

The command setclock loads the time from the clock onboard the memory expansion board (if fitted). If for any reason the time & date is incorrect you can reset the time/date by using the Date command and then re-saving it to the clock by using "Setclock Opt Save".

Date....

The Date command has been included to display the new system time & date.

Endcli › NIL:

Finally this closes down the initial CLI.

WORKBENCH 1.3

The new Workbench 1.3 startup-sequence has a similar set of commands but also some interesting changes. By studying this file you will be in a good position to tune your batch file when Commodore finally release 1.3 on an expectant world.

Addbuffers df0: 10

Same as WB 1.2

C:SetPatch ›NIL:

This patches the ROM in 1.2/1.3 Kickstarts enabling recoverable alerts. The ›NIL: stops a message stating that Setpatch is in effect from being displayed on the screen.

Cd C:

This changes the directory path to C which speeds up execution time a little.

Echo "A500/A2000 Workbench disk. Release 1.3 version 34.20*N"

Sys:System/FastMem First.....Fastmem

You will find this in the System drawer, moves the fast memory to the first in the queue.

Binddrivers

Same as WB 1.2

SetClock load

Same as WB 1.2 ("Opt" no longer required)

Date

Same as WB 1.2

FF ›NIL: -0

This command speeds up text output to the screen. -0 turns FF on and entering -n (in this case -n MEANS -n and NOT a number) turns it off.

Resident CLI L:Shell-Seg SYSTEM pure add....

The resident command erases, replaces or, in this case, includes a new command in the list of memory resident commands. If you list your C directory you will notice that some of the commands have a P included in the protection bits shown at the end. Any of these commands which are included in the startup-sequence and/or in the Startup II Sequence (see below) will be memory resident and will not have to access the disk drive.

Resident c:Execute pure

(As above).

Mount newcon:

The Mount command adds a new device to AmigaDOS. Newcon is used by the new

continued on page 38

continued from page 37

Workbench Shell (a much more powerful CLI).

Fail at 11

This line traps the resulting error if the next batch file cannot be found.

Run Execute S:StartupII

By using Run and Execute together the Amiga will "play" another batch file in the background while the rest of the original startup-sequence finishes.

Wait ›NIL: 5 mins

This line will wait up to five minutes for StartupII to finish.

SYS:System/SetMap usa1

Same as WB 1.2

Path RAM: C: SYS:Utilities SYS:System S: SYS:Prefs Add....

Adds additional paths to other directories. For example, if you tried to use the Format command from the CLI without adding a path to the System directory the Amiga would tell you it was an unknown command.

LoadWB delay.....

Adding Delay waits for the StartupII sequence to finish before loading the workbench.

Endcli ›NIL:

Same as WB 1.2

There are two parts to the 1.3 version of the startup-sequences. Part two is shown below. More commands can be added when you become proficient with AmigaDos and the Protect command.

Workbench 1.3 StartupII

Resident C:Resident pure
Resident C:List pure
Resident C:CD pure
Resident C:Mount pure
Resident C:Assign pure
Resident C:Makedir pure

All the above are included in the memory resident command list which helps speed up the startup sequence.

Makedir ram:t
Assign T: ram:t
Makedir ram:env
Assign ENV: ram:env
Makedir ram:clipboards ;set up CLIPS: assign
Assign CLIPS: ram:clipboards

The above list of commands make and assign directories to the Ram disk otherwise any text you may clip or copy in a word processor for example would have to be temporarily saved to the equivalent directories on your workbench disk.

mount speak:
mount aux:
mount pipe:

These lines add more new devices to AmigaDos.

resident Mount remove
resident Assign remove
resident Makedir remove

You can remove resident commands from memory but, if you have the memory to spare, they can be left resident to speed up subsequent use of these commands.

break 1 C....

Signals to any other processes that it is OK to continue.

For the sake of completeness I have included below an example of a hard disk startup-sequence.

Mount DH0:

This lets the Amiga recognise the existence of a hard disk unit.

DefSYS DH0:

The command DEFSYS is a public domain command available from a Northern Dealer, who specialises in hard drives and memory boards, which very quickly and easily assigns the system directories to the hard disk in one go.

CD DH0:

Moves to the root of the hard disk directory.

Execute S:Startup-Sequence.....

Plays the full 1.3 startup-sequence from the hard disk. This takes just 13 seconds in my case!! Now you know what you want as a present!

I hope you have enjoyed this quick trip around the startup-sequence.

Further technical advice and help can be obtained from ICPUG. Membership forms can be obtained from the Membership Secretary, 30 Brancaster Road, Newbury Park, Ilford, Essex, IG2 7EP

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DESKTOP PUBLISHING ON A SHOESTRING

by Ian Sinclair (BSP, £9.95)

Many would-be users are put off trying desktop publishing because of its cost. You not only need a computer with as large a memory as possible, they reason, but also software that tends to cost an arm and a leg – and a laser printer that will take whatever limbs you have left over.

But you can do it on the cheap, as Ian Sinclair set out to prove in Desktop Publishing On A Shoestring. Unfortunately for Commodore users, he demonstrates his method on an IBM PC clone running Mirrorsoft's Fleet Street Editor, and prints the results on a 9-pin Epson RX dot-matrix printer.

He adds brief asides on using Mirrorsoft's DTP software with an Amstrad PCW and the Atari ST. It is a pity that Mirrorsoft never got around to publishing an Amiga DTP program, as it once planned to do, since much of his advice will apply only to users of Fleet Street Editor.

Even so, for anyone interested in low-cost publishing, Sinclair's book provides examples of what can be achieved on the cheap, although he keeps information on such essentials as typography and design to a minimum, and his advice does not always seem sound to me.

For example, he prefers a single column approach to producing newsletters of an A5 size or even an A4. But a DTP program offers little advantage over a word processor at a single column width. Indeed, it has the disadvantage – unless you're using Fleet Street Editor v.3.0 – of using the program's bitmapped typefaces, which can be hard to read when printed on a 9 pin dot-matrix printer. You'd do better using a daisywheel printer, pasting up the result and adding headlines with transfer lettering.

I'm not convinced either that cheap desktop publishing methods are really suitable for producing camera-ready copy for printing "widely circulated advertising newsletters" by off-set lithography, as he suggests. He writes that FSE "can yield copy, even using a 9-pin dot-matrix printer, that is clear enough for all but the most demanding applications". To my eye, the results look amateurish. If you want to impress, then it's better to take your files to a laser printing shop or get a jobbing printer to typeset and print the whole thing.

For PC users, Sinclair provides useful ways to work around some of Fleet Street Editor's limitations. The program can make it difficult, for example, to add a heading to a two column story. Sinclair shows how it can be done. He scatters other hints about while demonstrating how to create business cards, letter heads and logos. But he nowhere tackles a large-scale project and anyway suggests that low-level desktop publishing is probably best confined to publications of a single page.

For FSE users – apart from those using the altogether different program of the same name on a BBC micro – his book is almost an essential purchase, since it's the only one that expands on the information to be found in Mirrorsoft's excellent manuals. Users of other programs will find it less useful, except as a general encouragement to cheap desktop publishing.

But it's as well to bear in mind that Sinclair's shoestring system costs a minimum of £515 for the hardware – an Amstrad PC512 with double disk drive – and more than £100 for the software. For that money, you could buy an Amiga 500 running Gold Disk's PageSetter or MicroSearch's City Desk. And you'd find it easier to achieve superior results.

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C5/89

ENHANCER

Mark Smiddy takes a brief look at the latest Amiga Workbench.

Ask any Amiga owner who does not spend all his life playing games "What is the worst thing about the Amiga?" and they are bound to answer "The CLI." The CLI is the key to unlocking the multi-tasking on the Amiga but up until now it has been at best a real pain to use. Now at last I can reveal the worst kept secret of 1988 - Workbench 1.3 has finally arrived and with it is bundled the Shell.

Shell is very much like the CLI with two important changes: firstly command lines can be editied and secondly the most recent can be recalled. This removes the need to have to re-type every erroneous command you happen to enter. Remember the all-too typical heartache of ED SYS:S/STARTUP-SEQUNECE? Type that in CLI and at best you have to backspace over the error - at worst... From the Shell, even if you have already pressed return and got an error message - all you have to do is press the up cursor and the line is recalled ready to be edited.

Commodore includes a host of new additions and extra commands. The two most important being the new Resident structure and Alias. Alias is a way to create simple and meaningful pseudonyms for those infuriatingly long AmigaDOS command lines. How about changing CD DF0: to something more simpple like 0? With alias this - to coin a phrase - is a piece of cake.

Resident on the other hand is a neat way of putting paid to the old "**Please insert Workbench 1.2 in any drive**" which usually caused AmigaDOS wanting to load a command. With resident it is possible to simply make your most commonly used commands resident in RAM during startup or at any time you choose. And there is no need to set up complex paths because AmigaDOS searches for the resident structure first.

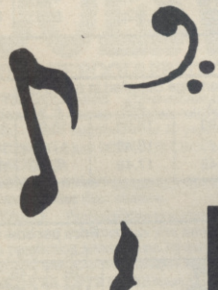
In addition, many of the old commands have been given a face lift and made a little more bug free. The pack also includes Extras 1.3 which provides a lot more printer drivers and an enhanced version of preferences to handle them.

Better still if you happen to have an Amiga 1000 the Kickstart 1.3 disk is included with the pack.

Best of all though, if you do not want to lash out on the enhancer by itself but would still like the facilties provided by Shell why nbot consider the unequalled AmiKit? This supplies most of the features found on The Enhancer like Shell - plus two disks brimming with some brilliant public domain software and a genuine beginners guide to Workbench and CLI. So now you can have your cake - and eat it too!

M.S.

Product: The Enhancer
Contents: Workbench 1.3 + Kickstart 1.3 + Extras 1.3 + manual
Price: £14.95
Contact: Commodore UK, Commodore House, The Switchback, Maidenhead.



MUSIC MASTER

C16/+4

Supersoft have been producing quality software for the Commodore range of machines since the early days of the PET, so it is no surprise to me that the quality of Music Master is very good.

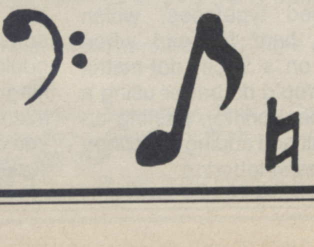
Music Master is a program that allows the user to record and play a musical score in two voices, it is also a very nice synthesizer that can be played with the keyboard. It is one of the few programs that is available for the C16 and +4 and it does work very well.

The program is only 40 blocks long, so it does not take very long to load, and once loaded you are presented with a very quick credit screen, this stays on the screen for all of 5 seconds, then you are presented with the main keyboard screen.

The screens are nice and simple and are very easy to use. It says a great deal about the program that I was able to get it working without even having to use the instruction manual, with various functions just by having a fiddle with it. It was only the save and load functions that caused me a bit of bother, (it turned out that shift A was the key to use), but once I found that it was very easy to save and load in the tunes.

Music Master covers 4 octaves and can use two voices. Various effects can be applied , and the waveform of each of the two voices is fully programmable by the simple use of the function keys. There is a built-in rythm generator that has a number of pre-programmed rythms that you can select at will. The tempo is, of course, fully adjustable as is the playback speed.

Music Master is a nice simple program that has been excellently programmed and will provide hours of enjoyment to the more musical among us.



A.E.

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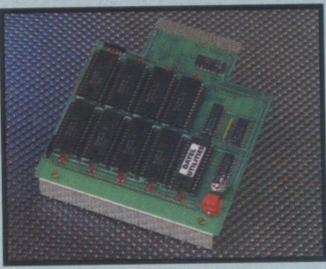

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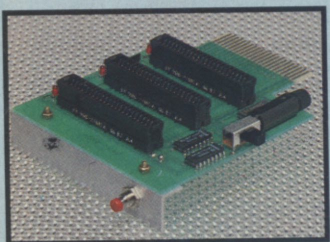

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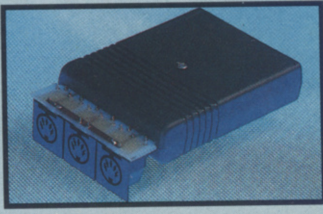

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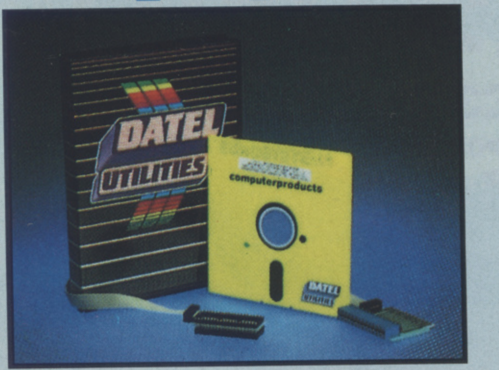

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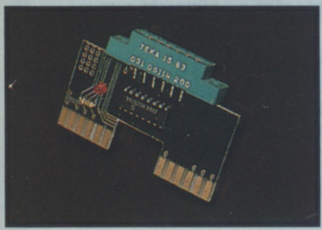

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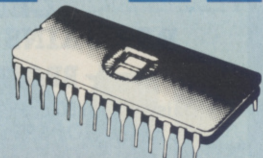

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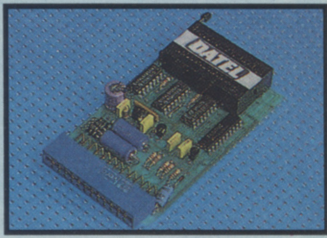

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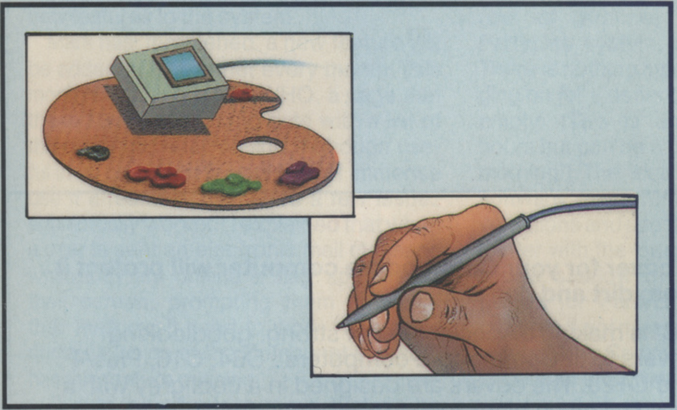

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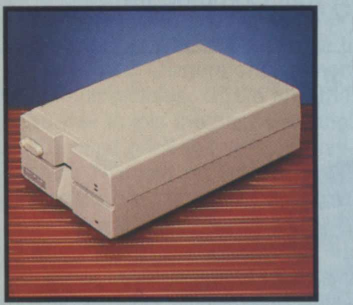

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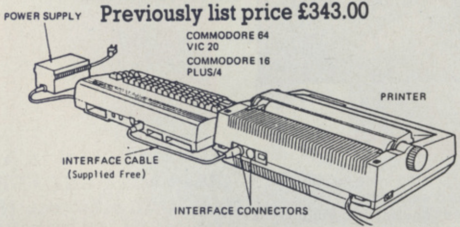

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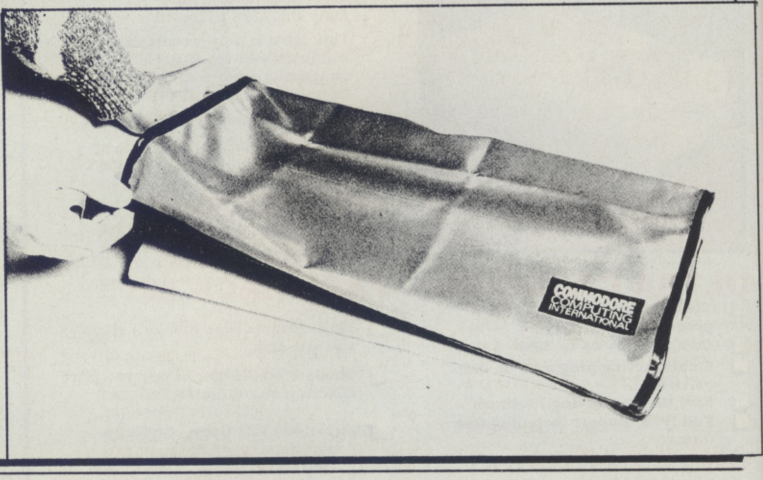

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COMPUNET THE FUTURE

In December Compunet announced that Nick Green, a chartered software engineer and cybernetician, had bought the company. Nick is not new to the online system. He was project manager for the development when Commodore were involved in the original setting up of Compunet. Nick has already introduced a new software developer in the figure of Mark Clarke, who has been busy adding new features to the system.

Mark has 'threatened' a new feature will be added to Compunet every month. This month's addition is NETWHO, a page that the system keeps up to date with a list of the users currently on-line. Although useful in its own right it would be of immense use if a feature I described a few issues ago actually worked! I explained that when a user is sent an electronic mail message while they are on-line a 'flag' appears on their screen, prompting them to check their mailbox. It used to work . . . but the current version of the Compunet software has this feature missing.

One of the new features is likely to be 'Dumb Terminal Access'. This will provide a text only, scrolling interface which will allow users with machines other than the Commodore 64/128 or Amiga to access the system. Owners of Commodore IBM-PC Compatibles, C16's and Plus-4's will be able to join the happy throng. It's also likely that a full PC version may be seen soon. This will provide a user interface almost identical to the C64 version, complete with the standard C64-style graphics.

Nick Green designed much of the original Compunet system and is responsible for many of its unique features, such as the voting facilities. On Compunet a user can register his or her vote on any upload. Other users can see how many people have voted and the average vote given. This system is invaluable in highlighting the programs worth downloading and the dross worth avoiding.

In the original announcement of the takeover in the NEWS pages on Compunet, Nick explained that he was interested in feedback from the users on the future of Compunet. He set up an area (GOTO NICK) in which Cnetters could air their views and then had to fight to keep up with the comments and queries.

Nick's area is full of ideas, from simple improvements to the user interface to major new ways of accessing the system.

One of the ideas being pursued is the use of Artificial Intelligence in the PartyLine system, described last issue. There is nothing more frustrating than logging on for a decent chat to find the place empty. (This is unusual during normal hours but can be a problem at three in the morning!) The idea is that the PartyLine software would remember previous conversations and use them as a basis for light banter with the lonely user. Although only a pale shadow of what has been suggested for PartyLine, the famous Eliza program (I got my version from Compunet, uploaded by Commodore themselves) will know how effective this can be.

> ***"Uploading a megabyte of data at 75 baud is not practical, and if your local exchange is as keen to drop the line as mine is, 1200 baud is not much better."***

The two desires most commonly expressed by Compunet users seems to be for the return of the infamous UCAT command, mentioned before in these pages, and the ability to upload at 1200 baud and beyond. The original Compunet modem operated at 1200/75 baud. This meant that it would download about 120 characters per second from the Compunet host to the users machine but could only transmit at 7.5 characters per second in the opposite direction.

Since those early days modems have, and continue to, drop in price and many users can now afford much faster devices. Many online systems are now offering access at 2400, 4800 baud and beyond. With the advent of Amiga owners on the system and uploading of more and more sophisticated demos and utilities for the C64 much larger files are being uploaded than ever before.

Uploading a megabyte of data at 75 baud is not practical, and if your local exchange is as keen to drop the line as mine is, 1200 baud is not much better.

Compunet will certainly be providing quicker means of upload in the future, the technology is there – it just needs organising. It's also apparent that Nick Green is interested in opening Compunet up to a much wider audience. Compunet is available through the International Packet Switched System though only a few Compunet regulars use this method of access at the moment. Compunet has had enquiries about access from as far as Australia. Currently it needs a little technical knowledge to gain access but it is possible.

Typical of the spirit of Compunet, and the dedication of its users was a comment, made in Nick's area, about the 'blocky' way that Compunet screens are displayed. Each screen of data sent from the Compunet host is transmitted as a series of blocks of bytes, along with a checksum. If the telephone system manages to corrupt the data this is detected by the checksum and the user's computer requests the host to retransmit the data. All this is invisible to the user but as a result the screen is painted in a rather jerky manner.

While discussing the future of Compunet somebody suggested that a smoother display would be easier on the eye. Around four o'clock the next morning TOP-CAT uploaded a utility that modified the users terminal software to do just that!

J.M.L.

ROLE PLAYING GAMES

Customising programs

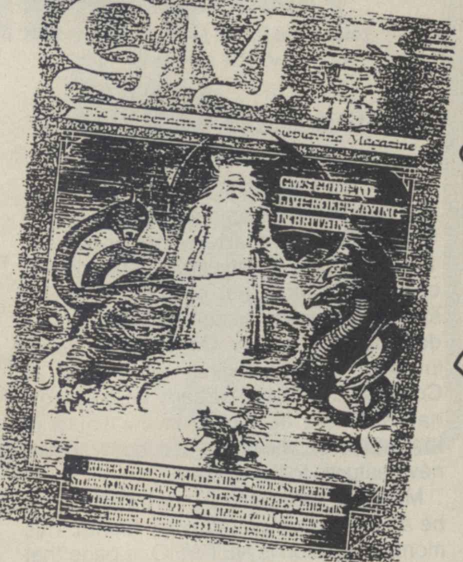
Peter Gerrard shows you how to create games to be played at night when all is quiet . . . and have countless sprite variations in your sleep . . .

I'm sure you all have sprite editors, character generator programs, musical programs and the like for the Commodore 64, so for our next foray into the world of role playing games on the 64 there's no need for me to present you with any listings of any sort. As far as those three aspects of the 64 go I find that I am still using programs that were produced several years ago. They do the job well, and it's only the more recent introduction of interrupt-driven routines that will find me moving away from those programs and doing the programming work in a different sort of way. However, in order to use the interrupt programs you still need to get the data from somewhere, and those early programs are certainly good enough to do that. A couple of them were written by Richard Franklin, a familiar enough name to CCI readers, so if you're reading this hello and thanks, Richard!

Early games that purported to be role playing in origin (I'm thinking of things like The Temple of Aphsai and its many clones here) made only limited use of the powers of the 64, but they did give a hint to the sort of thing that would be coming later. They had a re-designed character set, each character looking as if it would be more at home in a medieval scroll than on a modern computer, but it did do something for the atmosphere of the game. Certainly you should always think carefully about whether or not to change the character set in so dramatic a fashion as those games did. It can be quite hard to read at times, but the shape of the letters can be changed to a medieval script and still be perfectly legible, as more recent games have shown. But of course it isn't only the letters and numbers that need be altered. If you're going to alter a few you might as well play about with all two hundred and fifty five of them.

Perhaps not quite all of them, though. A space is a space, whether in a futuristic character set or a medieval one, and if you changed it to be a horse's head it would look somewhat foolish on the screen. But if there are any of the graphics characters that you're not going to be using in the game, they might easily be altered in some way so that they could be used. In The Temple of Aphsai and others they changed the letters and numbers, kept some of the original graphic ones for drawing boxes and the like, but altered many of the others for drawing little trees, sacks of gold, that sort of thing. With a certain amount of artistic flair these can be quite effective, but even if you are about as artistic as a Vinny Jones football tackle you could still gain some sort of idea of what to do by looking at the designs in other games. There's no need to copy them directly, even if in truth few people would ever realise that you had done so, but a pixel shifted here, another one there, and you end up with a nice sort of tree that could easily be used in a game of your own.

> ***"A pixel shifted here, another one there, and you end up with a nice sort of tree that could easily be used in a game of your own."***



Another use for graphic characters in games like this would be as icons, or pictures that represent a word. Then the user would only need to move the cursor about (with a mouse, perhaps) and either click a button or press RETURN over the appropriate word for it to be used. This solves the problem of having a massive vocabulary in your game, for you are only going to allow the player to use those verbs and nouns that you have included yourself. Thus you could have a little scroll for read, a flickering candle for light, a hand for take, and so on, easily building up sufficient vocabulary for the solving of any problems that your game may throw at the player. A crossed knife and fork could mean eat, the possibilities are virtually limitless, and it all serves to add a new dimension to your games and perhaps convince the player that there is an author who is taking time and trouble with his programs.

One aspect of those early games which was rather better than their use of user defined graphics, and which has now been taken to new heights, was the use of sound and music. I see from CCI that the latest version of the classic Defender of the Crown, available in CD Rom form, includes a stereophonic fully-orchestrated sound-track, real motion picture sound effects, and the occasional interruption from an actor speaking along with the storyline. I think we would be hard pushed to do that sort of thing on a 64, but it does show how far we have advanced in only a very few years.

But back to The Temple of Aphsai. Some of the sound effects themselves were not

BATTLETECH

that impressive, a few bleeps and burbles for the most part, but there were some interrupt-driven sounds being played occasionally in the background. These consisted largely of ominous tones, rather like a large bell being tolled mournfully, and they did add considerably to the impact of the game. Considering that Temple was written in Basic (and don't tell me that it wasn't Epyx, because I have had a look at it!) and that 64 Basic was pretty new to everybody, as indeed was the machine of course, those original programmers did pretty well.

It is now not beyond the realms of the 64 to add to those mournful bells and include sounds like swords crashing together, heavy clubs thudding home on elven armour, or whatever, which all increase the all-important feeling of being there and really taking part in the game. Musical soundtracks are jolly, and are all very well in the opening sequences, but unless you're going for the Cinemaware techniques of Defender of the Crown then the rule should really be keep it simple and keep it effective. We want the player to feel that they're there in the game, not watching a film on video.

But what you can do to greatly enhance your games is to combine text descriptions or graphics with sound. If a door creaks slowly open, why shouldn't the player be able to hear it? Ditto for a fall of rocks, or a grate opening, a horse whinnying, and so on. If a player is told that "you hear the snap of a twig in the distance" then let them hear it as well. Highly atmospheric, especially if the game is being played late at night when all is quiet and most of the world is deep in slumber. The player is hunched over the keyboard, suddenly a shot rings out – KABOOM! One impressed (and probably slightly shocked!) player, who will come back to your game and look out for future releases.

That was the sort of thing that Temple didn't do, but which is now becoming increasingly The Thing To Do. Who knows, you might make yourself known as the "sound effects person" in the way that Mr. Hubbard is the "soundtrack person", and you'll be in the happy position of people coming and giving work to you, rather than you having to go out and seek it for yourself.

We haven't mentioned high resolution graphics, mainly because they take up a lot of memory if you aren't too sure about what you're doing. Certainly the Temple games didn't use them, although I can see situations where an opening screen might be a high-res one, just to impress people. Better really to stick to sound effects, user designed graphics and existing ones, and that great feature of the Commodore 64 we haven't to far mentioned, namely sprites. Effective use of sprites can greatly enhance a good role playing game and turn it into a potentially great one, as we shall see.

Normally, as we all know, only eight sprites can be displayed on screen at any one time. Routines exist to enable us to get around this apparent limitation, but in role playing games there is generally no need for even as many as eight sprites to be displayed at the same time. When you think about it, what are you going to use sprites for? Most of the on-screen graphics can be handled by user-defined graphics, perhaps using three or four at a time to display various images. The only time we really need sprites are when we want some smooth movement on the screen, or possibly when we want some animation, and that latter aspect is something where people don't seem to be making the most of sprites and their capabilities, at least not in role playing games.

LIVE ROLE PLAYING

Sprites of various shapes and sizes can be used for displaying monsters or heroes on the screen, but with only eight available on screen at any one time you might be forgiven for thinking that you would have difficulties in producing any really effective displays. Not so, as a little bit of thought soon shows us. There is nothing to stop you having oodles of sprite data on disk, which can be loaded from within a program by using the LOAD "NAME",8,1 option rather than the standard LOAD "NAME",8 command for loading an ordinary program. The final ,1 at the end loads the code into memory from the same position in which it was saved, so what's to stop you having, say, ten different sets of sprite data all ready to be loaded at the drop of a disc? Nothing, really.

That way, although you're still only showing a maximum of eight sprites at a time, it appears that you have countless sprite variations up your sleeve, and those variations can be used to produce the aforementioned effective displays. But surely, you might think, you would need more than ten sets of data stored on disc? Well, if you think back to user-defined characters for a moment, suppose you have one that represents an eye open, and another set of data which represents an eye closed. Swap one set of data for another, and hey presto! Animation, and a winking eye. I have used that technique with sprites within the pages of this magazine before now; just two sets of data to produce a good effect. Whether with sprites or UDGs, the technique remains the same.

Again, as part of a graphical display somewhere on screen, you could have a spritely outline of a window, picked out on the side of a house in the dead of night in some gothic detective game. You arrive at the side of the house, intent on not making your presence known to the occupants, but you stumble against a bench and knock a pot off it (cue noise. The text might read something like "As you stumble against the bench a pot falls to the floor with a resounding crash. An occupant of the house is awakened, and immediately turns a light on." Your window sprite, that might be a multi-coloured on with a black background, could soon change that background colour to yellow, thus effectively impersonating a window through which light now shines. A simple enough command to implement, but a potent result from within a game.

One thing that really is worth considering, though, as far as sprites are concerned, is the faces of the people in the game. Suppose you have a party of five mighty warriors, and you have sprites for each of their faces. If one of the characters speaks, or you use the verb SAY so that one character can talk to another, wouldn't it be nice (as The Beach Boys might sing) to have that character actually appearing to talk? Impossible, you might think. No, because in all the time we are speaking and talking, whatever we are saying in whatever dialect, there are only 16 lip positions that occur over and over again. Not very many, is it? 16 sets of sprite data, stored as one block living somewhere away in memory, could effectively cope with every lip position, and be used to synchronise human speech. An effect that would be an admirable addition to any role playing game.

2300 A.D

That is just one example of animation, there are many others that could be considered as well, but that will have to do for now. For one thing, I'm about to load up Dungeon Master, and that means that you won't see me for AGES! *Bye for now.*

P.G.

continued from page 16

'POLYMATH'

by 37. Nor do we want to juggle in our skulls with umpteen places of decimals. So we solve this difficulty by the simple expedient of redefining R so as to equal R multiplied by Z. If R=(R×Z), then R must be divisible by Z; and Q (the correct answer) will be R (as redefined) divided by Z.

Lost? Let's go back to the random numbers we used earlier: R=17, and Z=7. Asking the player to divide 17 by 7 is no good. It will not divide evenly, because 17 is a prime number. So we redefined R as (R×Z), 17 multiplied by 7 is 119. And 119 divided by Z (7) is, of course, 17, the original value of R. R, even when redefined, is still a random figure because it was produced by multiplying two numbers which were themselves picked at random.

Sometimes the problem is a doddle .... multiply 17 by 1! You can either alter the program to prevent this, or you can simply treat the exercise as a test not merely of skill but of speed in reacting.

But of course there is no reason why you should hog this program yourself. You could lend it to your children, or younger siblings, so that they can work up a good speed at mental arithmetic.

With your newly acquired skill in mathematics, you will have twigged that once again the listing takes less than 40 lines. Indeed if your maths is especially good, you will know that it takes less than 30!.

P.M.

```
READY.

1 REM:POLYMATH-PETER MCDONALD-COPYRIGHT 1989
10 SCNCLR:DEF FNC(X)=40-(LEN(P$)/2):GOSUB 8500
140 SLEEP 3:ON RND(1)*4+1 GOSUB 1000,2000,3000,4000
150 IF A< >Q THEN GOSUB 8000:GOTO 150
160 GOSUB 7000:GOTO 10
1000 Q=R*Z
1020 SCNCLR:COLOR 5,2:PRINT TAB(30)"MULTIPLY";R;"BY";Z:GOSUB 9000:RETURN
2000 R=(R*11):Z=(Z*7):Q=R+Z
2020 SCNCLR:COLOR 5,2:PRINT TAB(32)"ADD";R;"TO";Z:GOSUB 9000:RETURN
3000 R=(R*7):Z=(Z*3): Q=R-Z
3020 SCNCLR:COLOR 5,2:PRINT TAB(28)"SUBTRACT";Z;"FROM";R:GOSUB 9000:RETURN
4000 R=(R*Z):Q=R/Z
4020 SCNCLR:COLOR 5,2:PRINT TAB(31)"DIVIDE";R;"BY";Z:GOSUB 9000:RETURN
7000 P$="QUITE CORRECT! WANT TO TRY ANOTHER PROBLEM (Y/N)?":GOSUB 7500
7010 GETKEY C$: IF C$="Y" THEN RUN
7020 GOTO 9500
7500 PRINT:PRINT:COLOR 5,3:PRINT TAB(FNC(X));P$:PRINT
7510 RETURN
8000 P$="SORRY! YOU'RE WRONG! TRY AGAIN (Y/N)?":COLOR 5,3:GOSUB 7500
8010 GETKEY Y$: IF Y$="N" THEN GOTO 9500
8020 P$="O.K.": GOSUB 7500:GOSUB 9000:RETURN
8500 R=(INT(RND(0)*10+11))
8600 Z=(INT(RND(0)*10+1)): RETURN
9000 PRINT:PRINT:COLOR 5,8
9005 : PRINT TAB(28);
9010 : INPUT"WHAT IS YOUR ANSWER";A
9020 RETURN
9500 SCNCLR:P$="THANK YOU FOR YOUR CO-OPERATION":GOSUB 7500
9510 SLEEP 2:SCNCLR:P$="AM SIGNING OFF NOW....":GOSUB 7500:SLEEP 2:SCNCLR:END
9999 DSAVE"@POLYMATH"
```

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PALA

Paladin is a fantasy, tactical combat game for one player. Published by Omnitrend, who are relatively unknown in this country but who are very well known in the United States for Universe RPG-type series of games. Paladin is based around quests in the same way as a wargame revolves around battle scenarios. Therefore the player may play as long as he or she likes using game-rules that are relatively easy to learn. The player can then concentrate more on strategy and less on the instruction booklet. Thus, Paladin can be freely explored without a great deal of puzzles thrust in the way of the player or a commitment to follow a complicated plotline.

Although Paladin looks like a fantasy wargame (which, in fact, it is), it also has role-playing features. You actually play the Paladin in question leading a party of men, who have a range of different professions and skills, through a series of ten different quests. While the immediate task is to complete each quest and get out alive, the overriding task is to improve your Paladin character. This can only be done by actively participating in each quest. So only by using your present skills will you be able to improve them. If you survive each quest, your character's statistics will be saved and loaded into the next quest, with the ultimate aim is to reach the standard of "Knight". As a Knight you will be given extra training, improved weapons and better armour; necessary to undertake "Knight" level quests, the most difficult quests in the game.

Playing Paladin is straightforward as the movements and actions are all controlled via the mouse and icons. A magic pentacle forms the beginning of your quest and you move the currently active character in any one of the four cardinal points from the pentacle.

> *"If the character has enough movement points available he will scamper up to the area you clicked on."*

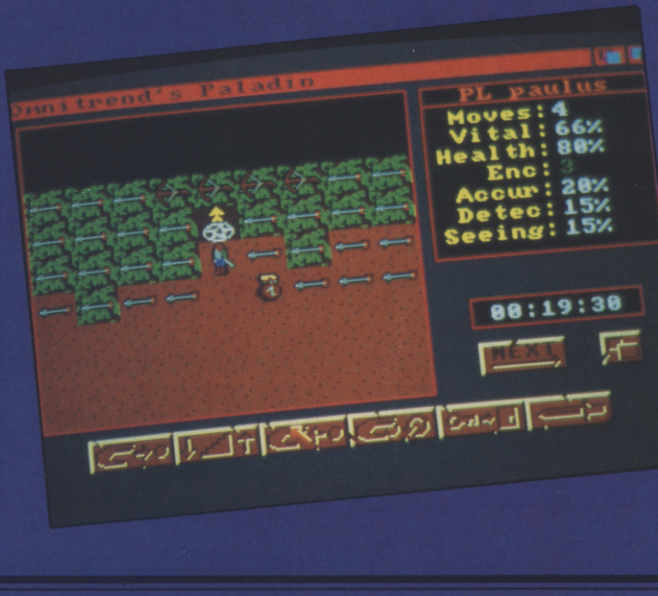
If the character has enough movement points available he will scamper up to the area you clicked on. Actions, such as opening doors and climbing stairs are all done via icons.

After the first character has been moved from the pentacle to the final position another member of your team will appear on the same pentacle.

You command four different classes of character; swordsman, mage, thief and ranger. Each character has different skills and weapons. Rangers, for example, are very mobile with light armour and a limited ability in spell casting. Spells vary from "mind stuns" to "detect doors". Enemies come in all shapes and sizes. From Dragons and Trolls to Sorcerors and Spirits who, literally, scare you to death.

Omnitrend's Paladin
PALADIN
© 1988 Omnitrend Software

Objects can be "picked up" and "used" depending on the situation. But only a limited amount of objects can be picked up by one character because each object has its own weight and takes up a certain amount of room when carried. This aspect contributes towards teamwork and strategy. For example, do you send a character, who is only able to carry a crossbow and some bolts, after those trolls alone or send someone who has a healing potion with him in case he runs into any trouble?



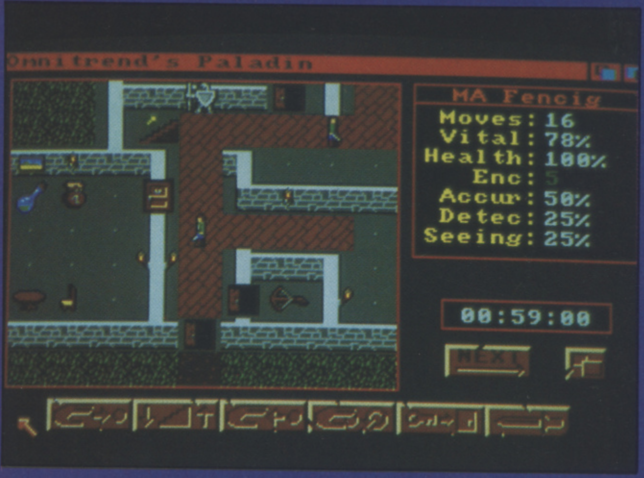
PL paulus
Moves: 4
Vital: 66%
Health: 80%
Enc: 3
Accur: 20%
Detec: 15%
Seeing: 15%

00:19:30

ADIN

Omnitrend

Graphics are simple but effective. They are clear and precise and give the player all the information he needs. Paladin presents an excellent graphical front-end that other wargames would do well to emulate. Too often strategy games have an excellent computer-opponent with poor graphics losing that initial "grab-value". Sounds are represented by digitised spot-effects such as a scream when a character dies. They are not plentiful, but if you are using an Amiga with 1 Meg of RAM you can hear extra sounds.


Omnitrend's Paladin

MA Fencig
Moves: 16
Vital: 78%
Health: 100%
Enc: 5
Accur: 50%
Detec: 25%
Seeing: 25%

00:59:00

> *"Paladin loses a little realism because movement and offensive actions can only be made in four directions as opposed to Laser Squad's eight."*

Paladin is only available from limited outlets in the UK because it is an American import. This may explain its high price. However, the game includes 10 quests which keeps it fresh. Even when they are exhausted there is a very powerful "Questbuilder" within Paladin which allows you to create new scenarios. In addition, a scenario disk holding around 16 extra quests has just arrived, unfortunately too late to be included within this review, so you can see that your initial outlay is more of an investment.

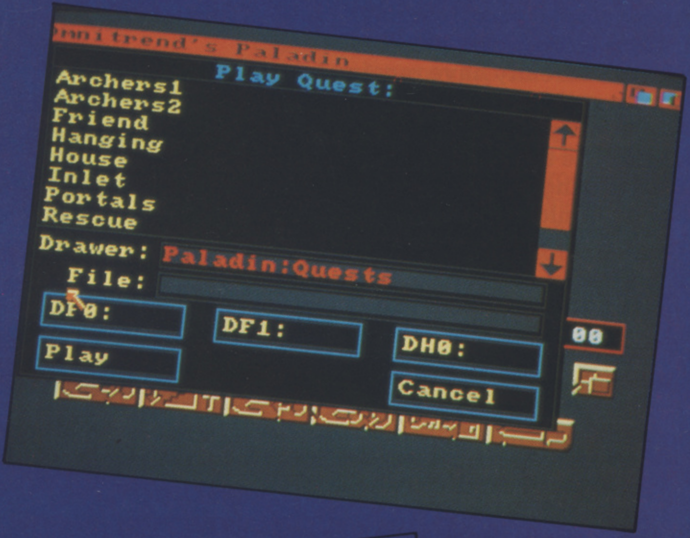
Paladin compares to Laser Squad, which first appeared on the Sinclair Spectrum and which has a similar game system.

Paladin loses a little realism because movement and offensive actions can only be made in four directions as opposed to Laser Squad's eight. The manual could be more informative too especially when explaining the Quest-building sequence.

However, this does not denegrate the play too much.

In conclusion, therefore, you will find Paladin to be a well designed program and one which will give you hours of pleasure and a sense of achievement when you complete a quest. While role-playing aspects of the game ties each quest together negating the rather cold feel that a wargame gives with its scenarios being separate entities. Also, because the system is so open-ended with new quests appearing alongside the Do-It-Yourself option you will get value for your money.

P.R.


Omnitrend's Paladin

Play Quest:

Archers1
Archers2
Friend
Hanging
House
Inlet
Portals
Rescue

Drawer: Paladin:Quests

File:

Graphics: 80%
Sound: 55%
Playability: 85%
Overall: 83%
Rating: MEGA
Price: £35.00

Because Paladin is an American import it can be purchased at the following mail-order shops:

COMPUTER ADVENTURE WORLD,
BANK BUILDINGS,
1A CHARING CROSS, BIRKENHEAD,
L41 6EJ.
TEL. 051-666 1132.

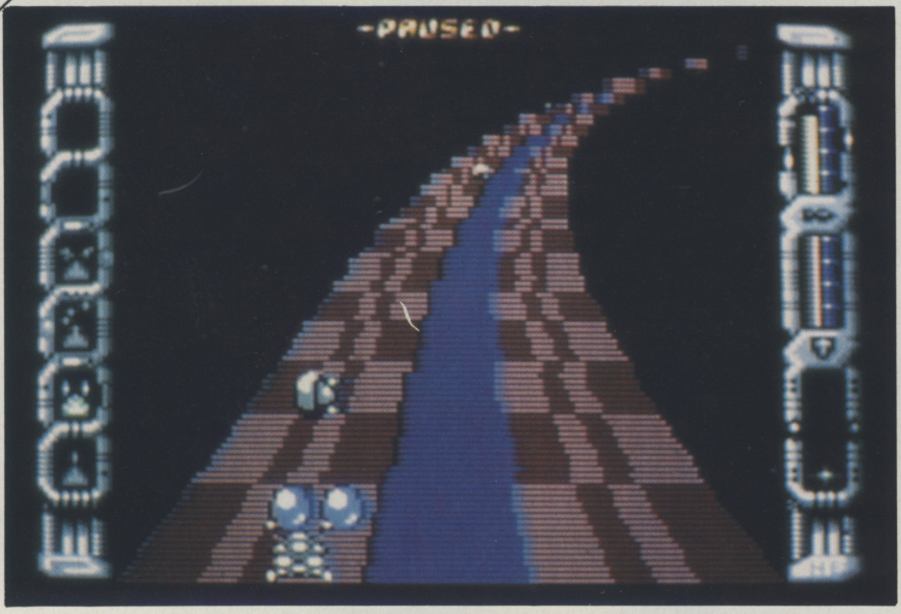
STRATEGIC PLUS SOFTWARE,
PO BOX 8,
HAMPTON, MIDDX., TW12 3XA
TEL. 01-979 2987.

C64

IFFY

Hewson

Eliminator

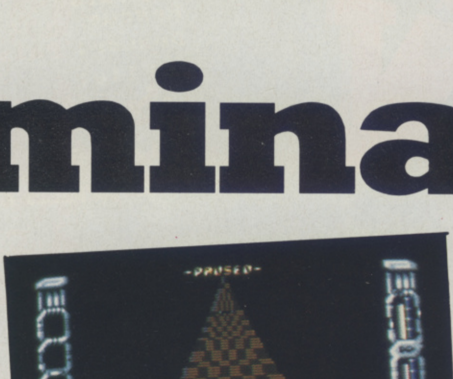


After comnpleting his award winning game Nebulus, John Philips started work on the ST version of Eliminator. The Amiga incarnation is due to arrive any day now via the programming talents of Swiss software developers Linel, but we already have received the 64 game coded by Tim Rogers.

Piloting the Eliminator, your task is to race through stage after stage, destroying everything in sight, (you don't think that's original?). Each stage is a long, winding chequered track strewn with barriers and aggressive aliens. Most stationary obstacles are indestructable and have to be avoided. More fun is had dealing with the aliens. These usually appear in gangs of four, zooming over the horizon before performing a little extra-terrestrial square-dance and disappearing. You start armed with a plain old single-shot laser, but as you have probably guessed, this can be upgraded by picking up tokens along the way. There's a double-shot version that helps things but strangely enough, the other four are no more effective than the first two.

> *"Tunnels, waterways and ceiling tracks reveal themselves as you go on, and all the time they get more and more crowded."*

From the rather uneventful first level, the tracks progress into more complex forms. Tunnels, waterways and ceiling tracks reveal themselves as you go on, and all the time they get more and more crowded.



The 3D race and shoot action is very reminiscent of games gone by, and coming from "the mega-mind of John Philips" is a bit disappointing. Seed is essential in such a game, but unfortunately that is one thing Eliminator does not have. Compared to Trailblazer and Cosmic Causeway, the road moves slowly, and only alternate lines have been used for the effect which is far from ideal. Another problem is that obstructions only become recognisable as they appear in the immediate foreground, often not giving you enough time to react. The upshot is that rather demanding fast reflexes, the game forces you to learn the layout of each track and foresee the dangers. (Come on now! Does any real shoot everything in sight fan really want to use his mind? Of course not!)

> *"rather than demanding fast reflexes, the game forces you to learn the layout of each track and foresee the dangers."*

Some sound effects would have been nice, as the backing music starts to whine before long.

Despite all the blurb promising high speed thrills and mind-blowing action, Eliminator turns out to be a tame Cosmic Causeway variant. Maybe with slicker programming and some imaganative sprites it could have made it, but without any of that there is little to recommend in it.

B.V.

Graphics: 54%
Sound: 43%
Playability: 58%
Overall: 57%
Rating: IFFY
Price: £9.99 (cass)

EUPHONY

A musical program for the dear old C64.

One thing that first drew my attention towards the C64, which was on display in my local computer store several years ago, was the fantastic sounds that I heard emanating from almost every game. Owners of other computers looked on and listened, green with envy, I couldn't wait to get my hands on one and say hello to good old SID CHIP! When the day came, I started to write programs in Basic just like everyone else. Then I discovered, just like everyone else, that it was nearly impossible for a complete beginner to write music in Basic, or to draw a simple circle in the middle of the screen. The C64 is a great computer, without doubt, but suffers because it is restricted by a basic that is about as helpful as an ashtray on a motorbike!

When Commodore introduced the C128 they were thoughtful enough to remedy the shortcomings of C64 Basic, giving us powerful graphic commands and a simple method of writing musical score to the machine in basic. Those of you that are familiar with C128 Basic will know how easy it is create little ditties and to change the sound of the three voices available to you. Now the C64 has the same ability with even more power at hand in the form of EUPHONY.

The word 'Euphony' means an agreeable sound or an easy smooth manner of uttering sounds. Well it is exactly that, agreeable, easy and also smooth to learn.

> *"Some pieces are relatively short, only one or two minutes in length, but there are a few 17 to 20 minutes long with a special Christmas Carol compilation written that takes 41 minutes!"*

The program, published by T.C.O. Software Co, is 100% machine code written and has been created to allow you to play pieces of pre-transcribed music that you get already written for you. They are crammed onto all four sides of this double disk version, there are many to choose from. 42 pieces altogether, most of them very famous pieces from the great composers like Beethoven, Bach, Chopin, Mozart and Handel, they all get a good airing. Some pieces are relatively short, only one or two minutes in length, but there are a few 17 to 20 minutes long with a special Christmas carol compilation written that takes 41 minutes!

> *"The text files can be greatly condensed. This allows you to produce pieces of work which are complete in length where other programs can just about manage a short tune."*

Euphony is menu driven making it simple to follow and selection easy. The main object this program is two-fold. Firstly to make it possible to write music for three simultaneous voices at various tempos and pitch, with sounds defined and created by the user. Secondly, Euphony has this large ready-made repertoire which can be played and even altered if you choose to do so. When you select a particular piece of music, you are presented with a stave complete with a couple of bars of music for the current tune on the screen. As the music plays so the notes displayed change colour and a piano keyboard at the bottom of the screen plays out the piece.

Those of you familiar with the best Amiga music package Deluxe Music Construction Kit will recognise the screen output. You can select which measures to play and how fast to play them. I like particularly the ability to change the sounds. I get great pleasure from finding out what the Brandenberg Concerto would sound like, if someone played it on the bagpipes, for instance. There is a selection of ten preset voices or you may change the ADSR, filters, sync, ring modulation and vibrato settings yourself to produce unique sound effects.

The second, and most important part of Euphony allows YOU to become the computerized composer. Whereas some other computer music programs let you place notes directly onto the music staff on the screen, one drawback to this method is that it is very heavy when it comes down to memory management. Euphony requires you to produce text files in basic type statements. In Euphony one enters notes such as 'A', 'B', and 'C' etc. Using files such as this maybe less intuitive than placing notes onto the screen. On the other hand, the text files can be greatly condensed. This allows you to produce pieces of work which are complete in length where other programs can just about manage a short tune.

Music is much about repeated statements and repeated rhythms so one great advantage is that when you are using text files they allow a great deal of flexibility in defining repeated sequences. Changing tempo and key signatures etc. can also be repeated by making use of the great full screen editor of the C64.

Another advantage of using text files is that, with a little effort, you will learn the locations of the notes on the music staff, once this occurs you will probably be able to enter music more rapidly than moving a cursor around the music staff.

A handy little program resides in Euphony called the "Player". This file enables you to send your own musical creation to your friends as well as incorporating your work into one of your own basic programs. Your mates can listen to your masterpiece without having to own a copy of Euphony themselves.

If you are lucky enough to own a MIDI instrument then you could take full advantage of the fact that Euphony can output to any MIDI instrument or keyboard.

You won't take long to learn the language used in the text files as most of the commands are single characters in length and nearly all make common sense. I found this program very comprehensive and a joy to use. It is about time the C64 was given a chance to catch up a little with the C128. Super musical scores are now quite simple. A bit like me!

B.C.

Price: $39.95 + $3.00 shipping
Contact: TCO Software, P.O. Box 81504, Fairbanks, AK 99708. (USA)

C64

Naff

WHO FRAMED ROGER RABBIT

Buena Vista

Who Framed Roger Rabbit is without doubt one of the most technically accomplished films in movie history. Taking a look at the tie-in computer game, it is clear that those responsible for the movie had very little to do with Buena Vista's effort.

Maybe like me, the designers spent more time looking for the joins than following the rather twisted storyline, as the three parts of the game are only very loosely connected to the plot. In short, Roger Rabbit has been framed for the murder of Marvin, the owner of Toontown. Roger has to clear his name and track down Marvin's Will which officially hands Toontown over to the Toons themselves.

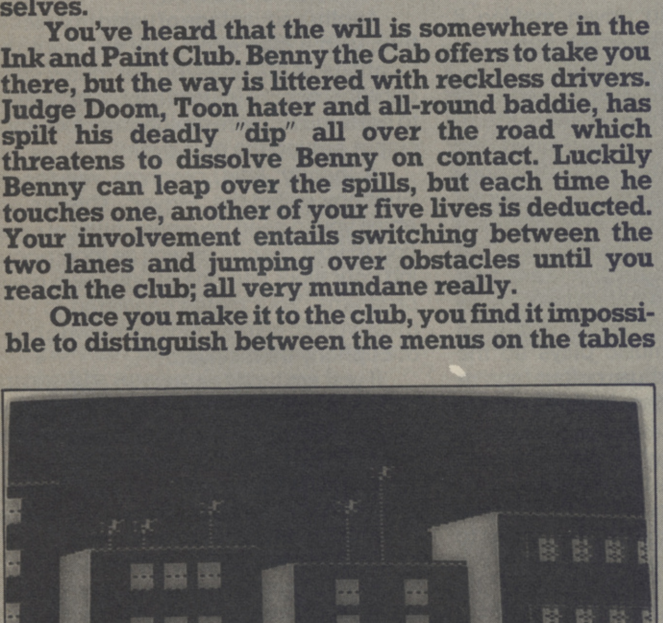
You've heard that the will is somewhere in the Ink and Paint Club. Benny the Cab offers to take you there, but the way is littered with reckless drivers. Judge Doom, Toon hater and all-round baddie, has spilt his deadly "dip" all over the road which threatens to dissolve Benny on contact. Luckily Benny can leap over the spills, but each time he touches one, another of your five lives is deducted. Your involvement entails switching between the two lanes and jumping over obstacles until you reach the club; all very mundane really.

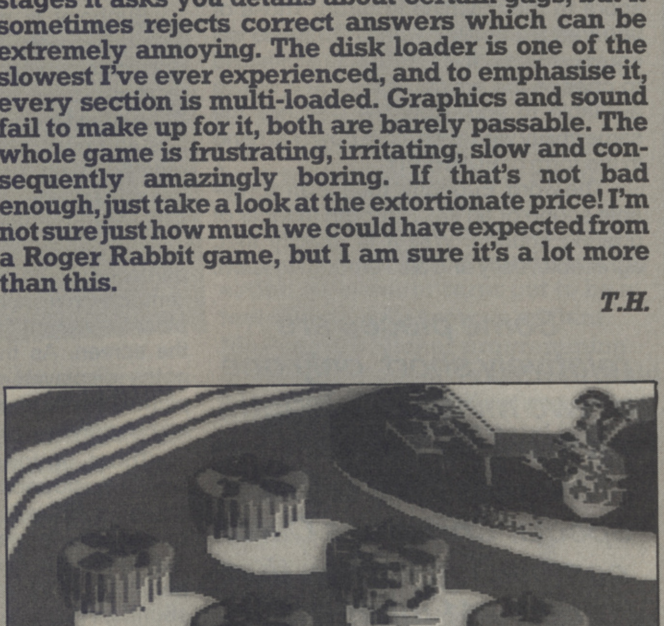
Once you make it to the club, you find it impossible to distinguish between the menus on the tables and the will. The only thing to do is race around all the tables grabbing every scrap of paper you can. Accidentally get hold of a drink and Roger does an impression of a fog-horn and collapses on the table. You also have to keep a look out for the gorilla bouncer patrolling the bottom of the screen. As in the first stage, the action is drawn out and as a result is tedious from the outset.

Next comes another ride in Benny as you drive to the gag factory. Here you have to defeat Judge Doom's weasels by using all the gags you can find, in the hope that they'll laugh themselves to death.

With the game you get a catalogue for the gag factory which acts as copy protection. Between stages it asks you details about certain gags, but it sometimes rejects correct answers which can be extremely annoying. The disk loader is one of the slowest I've ever experienced, and to emphasise it, every section is multi-loaded. Graphics and sound fail to make up for it, both are barely passable. The whole game is frustrating, irritating, slow and consequently amazingly boring. If that's not bad enough, just take a look at the extortionate price! I'm not sure just how much we could have expected from a Roger Rabbit game, but I am sure it's a lot more than this.

T.H.

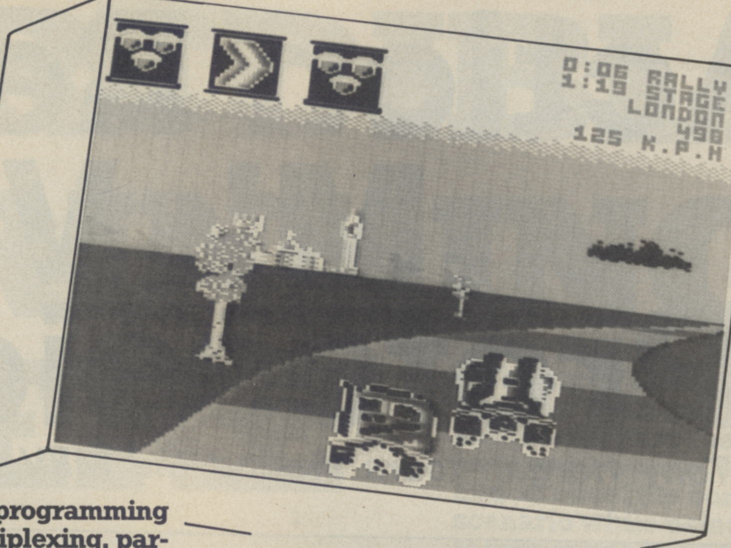




Graphics: 66%
Sound: 48%
Playability: 29%
Overall: 22%
Rating: NAFF
Price: £24.95 (d)

C64

Naff



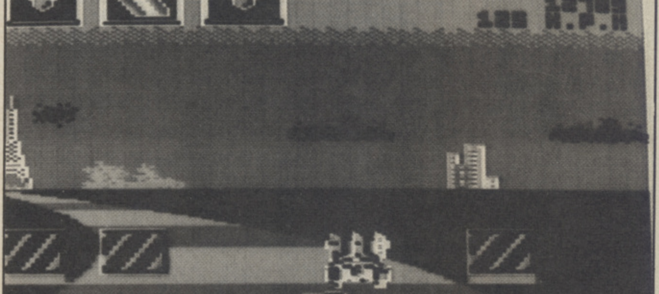
Elite

SUPERTRUX

As the standard of 64 games programming steadily improves, sprite multiplexing, paralax scrolling and the like are becoming more and more common. One area left miles behind these advances is 3D race games. For 64 owners there seems to be a choice of two types: those that use hardware sprites for all the vehicles and roadside scenery, gaining speed but losing out in size (eg. Pitstop II and Super Cycle), and the others that attempt larger graphics with character sprites, usually resulting in slow and jerky animation, such as Outrun, Roadblasters and WEC Le Mans. Supertrux, some would say foolishly, takes the second option.

> ***"The race starts in London. As usual London has been recreated as a featureless green plain with what I presume to be Big Ben on the horizon (or is it Windsor Castle?)."***

Obviously the game couldn't be billed as a straight Outrun clone, so as you must have gathered by the title, instead of a Ferrari you drive a truck. According to the waffle, your cab weighs in at thirty tons. Strange then, that one of your major obstacles in the early stages is plastic traffic cones. I think in reality one of these cones might have just a touch more trouble in halting thirty tons of speeding truck.



The race starts in London. As usual London has been recreated as a featureless green plain with what I presume to be Big Ben on the horizon (or is it Windsor Castle?). Steer clear of those cones and opposing drivers for long enough and a feeble attempt at a fork in the road appears before you. Without a glimpse of the channel tunnel or a whiff of sea air you now find yourself trucking through the streets of Paris. So it goes on throughout Europe. With each country you get a different coloured wasteland to drive through and a new landmark on the horizon. Cones are replaced in some regions by striped barriers, and other routes take you through stages strewn with oil spills.

To say that sound takes a back seat would be generous. To say it's locked away in the boot would be more like it. Graphics throughout the game are extremely bland. Emphasising the poor 3D is the fact that objects only appear once they get to the foreground.

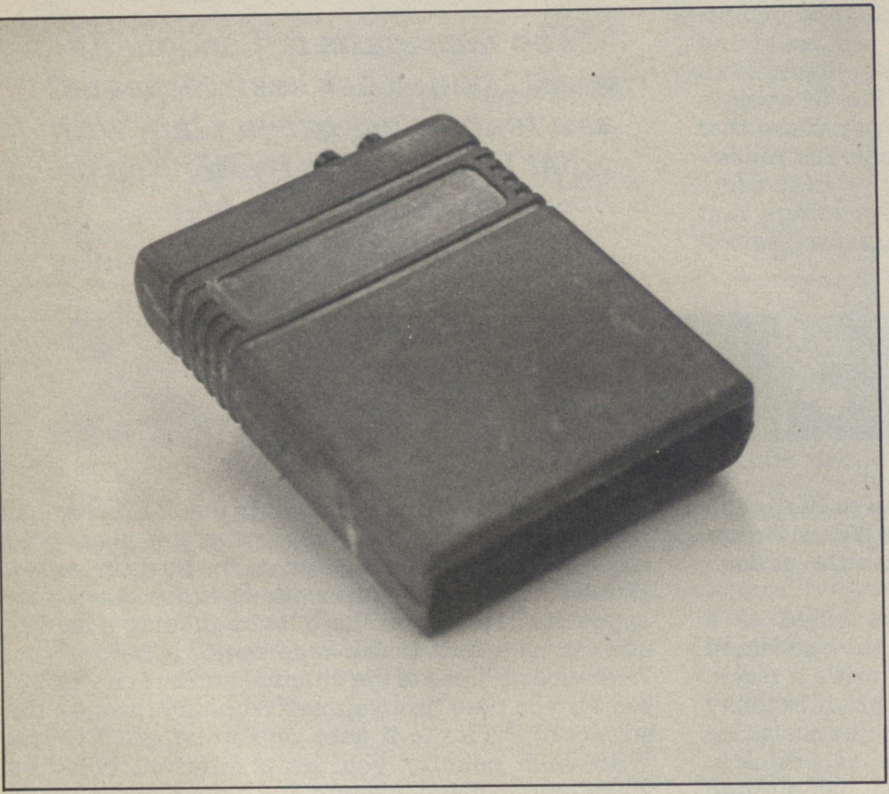
These numerous faults may have been tolerable if it were a lot cheaper and had something new to add to the theme. Without any such redeeming features, there's nothing to recommend in Supertrux. If unoriginal, unrealistic, ugly, tedious, expensive games are your cup of tea, reserve your copy now!

T.H.

Graphics: 32%
Sound: 22%
Playability: 28%
Overall: 27%
Rating: NAFF
Price: £9.99 (c)
£11.99 (d)

Action Replay Mk V Professional

Tony Horgan tours around the MkV backup cartridge



They may have started as simple copying devices, but today's generation of backup cartridges have a lot more on offer. Datel's Mk V version of Action Replay takes things one step further.

Once you plug it into the back of your 64 (or 128), there's very little chance that anything will detect it. This leaves you free to load any program, be it a game, utility, demo or whatever, freeze it and have a thorough snoop around its inards. A tap of the freeze button switches control to the cartridge and brings up the main menu. From here you can branch off to a number of sub-sections, the most obvious one being the backup menu.

For disk users there are two different turbos and a standard save format. Functions are included for listing a directory and formating a disk to make the process a lot simpler. There's also an option to save a loader onto the disk for easier rebooting. A fairly fast tape turbo caters for less than perfect cassette decks, while an even speedier mode accommodates the more impatient ones among us. The disk turbo can also be used from BASIC.

If you fancy a scrutinisation of all the game's sprites, the sprite viewer is just the thing. It lets you scroll through all the possible sprite data, run through animations, flip, mirror, wipe, load and save them to tape or disk.

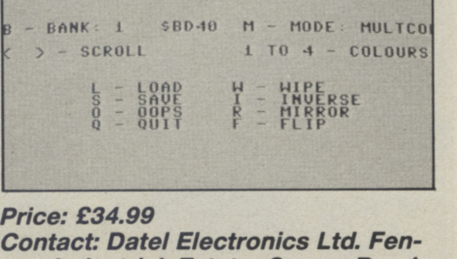
The monitor is one of the most useful utilities. You can scan the entire memory, assemble and disassemble code, hunt for strings of bytes, convert decimal, hex and binary, interpret memory as ascii or screen display codes, and generally rearrange the program.

If you don't fancy working out your own infinite lives pokes, you can always let the cartridge have a go itself. The sprite killer disables sprite collision detection but rarely has an effect on today's games. A more promising solution is to initiate the infinite lives routine, which comes up with the goods more often than not.

The text replacement feature of the mk IV version has been thrown out to make way for a screen editor which allows you to overtype graphics characters onto a frozen screen.

Although the cartridge is packed full of useful utilities, the latest versions does not have that much over the last. Still, the disk and tape turbos combined with the monitor make it ideal for programmers, while its cheat and backup functions are well suited to a gamer. In the years I have been using Action Replay I have found it an essential part of my set-up. Whether it would be worth upgrading from a Mk IV cartridge is questionable, but for anyone else wondering which cartridge to go for, Datel's is the man for the job.

T.H.



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                ↑↑↑↑↑↑↑

B - BANK: 1   $BD40  M - MODE: MULTCO
< > - SCROLL          1 TO 4 - COLOURS

      L - LOAD        W - WIPE
      S - SAVE        I - INVERSE
      O - OOPS        R - MIRROR
      Q - QUIT        F - FLIP
```

Price: £34.99

Contact: Datel Electronics Ltd. Fenton Industrial Estate Govan Road, Fenton. Stoke-on-Trent

INCREDIBLE SHRINKING SPHERE

Electric Dreams

Set in the future on the planet Sangfalmadore is a training arena for up and coming spheres, ready to go into battle on the terrifying DEATH RUN. Some silly old colonel with the name of Matt Ridley, is fed up sitting behind a desk all day and wants something exciting to happen in his dull life. So what does he do? Only attempts to complete the most dangerous training arena on the planet. I ask you! Well, of course he didn't make it and his fighter ball – sorry sphere – has been disabled by some assassins, and it's up to you to help him out and rescue him from the DEATH RUN.

You take up the command of a fighter sphere similar to that of the colonel which has a built-in 70mm cannon (in other words a gun that shoots out overgrown fullstops) with which to disperse the enemy. The game is made up levels that have four maze like plates to them which have to be finished in order to progress.

The plates are constructed of square tiles, and on some lie hazards and also some helpful extras such as faster speed, a protective shield and, of course, the ability to grow larger and smaller.

The hazards include things like damaged tiles which will vaporise you if you are too heavy, a prison which immobilises you for a short while and revolvers that spin your sphere around and reduce your score.

"The hazards include things like damaged tiles which will vaporise you if you are too heavy, a prison which immobilises you for a short while and revolvers that spin your sphere around and reduce your score."

The control method is really awkward and can get very frustrating to use. You move your sphere around the screen as it scrolls reasonably well but the collision detection isn't very good at all.

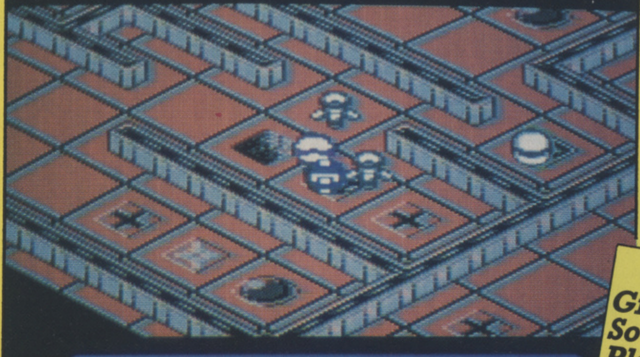
The game's instructions are pathetic. I can quite honestly say that they are the worst I have come across. They go on and on about the boring scenario while using difficult to pronounce invented words to try and make the game more interesting, but it just causes it to be even more confusing. They hardly tell you how to play the game – maybe the writers don't know themselves!

The sound is the game's highest point. A fairly good soundtrack plays on the title screen but the in-game sound FX are below average. Its graphics look a little like an out-of-date Paradroid clone using very few colours and some badly defined sprites.

Take my advice and don't be fooled by the complicated design, the game tries to be different with a mix of strategy and arcade but it doesn't work at all well.

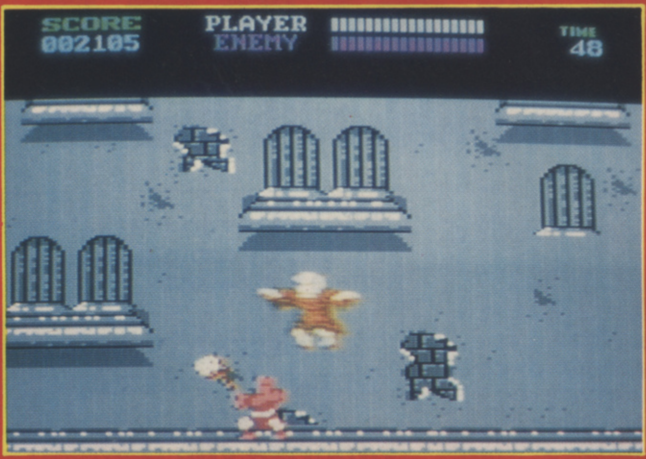
Price:* *£9.99 (c)
£14.99 (d)

D.H.



Graphics: 35%
Sound: 58%
Playability: 29%
Overall: 32%
Rating: NAFF

TIGER



The number of arcade conversions being churned out at the moment is quite astonishing, but unfortunately there are very few really good ones – can Capcom's release of Tiger Road break that deadlock? Well...

In nearly all arcade games there is either a nutty old villain who has plans to destroy the Earth or a fair maiden who has been kidnapped from her fortress (or maybe both!), this time it's a Japanese with the weird name of Ryu Ken Oh who has kidnapped a number of children from a local village. He now wants to brainwash them so that they will free these unfortunate children, which involves going through a long and dangerous journey.

The game is split up into four levels, in each of these levels are several stages which you must overcome, in a certain time limit, in order to progress to the next level. You have with you, a double-headed axe (different weapons can be collected along the way) in which to fight off the enemy, who come from both sides of the screen. The stages each have varying settings and obstacles – such as rocks and platforms on pillars – which are always crowded with masses of Samurai warriors, dragons and the like.

The screen scrolls in whichever direction you travel (up. down, left or right) quite smoothly not to give you a headache. The basis of the gameplay lies quite heavily on the idea that the classic Kung Fu Master, that is, the enemy come on from both sides of the screen and attack you in the centre of the screen (you have to use the same technique of quickly tapping the button while moving the joystick from left to right).

To avoid the enemy you can hit them with your weapon or jump out of their way onto a platform or just over their heads (you can

AMIGA

Gameplay is very similar to the 64 version. The obvious differences are in the graphics. Higher definition on the sprites bring it a lot closer to the coin-op, though the central character walks with a bit of a limp. Background graphics are often highly detailed, and the variety of spooky scenes means there's a strong incentive to keep playing. Sound could have been used more effectively; although the FX are good enough it would really benefit from some background music. It suffers a little from the ST port syndrome, but thankfully the scrolling in the reduced playing area is fairly smooth. All good simple fun, but as far as the gameplay is concerned it breaks no new ground.

Graphics: 79%
Sound: 55%
Playability: 77%
Overall: 75%
Price: £19.95
Rating: CRISP

ROAD

Capcom

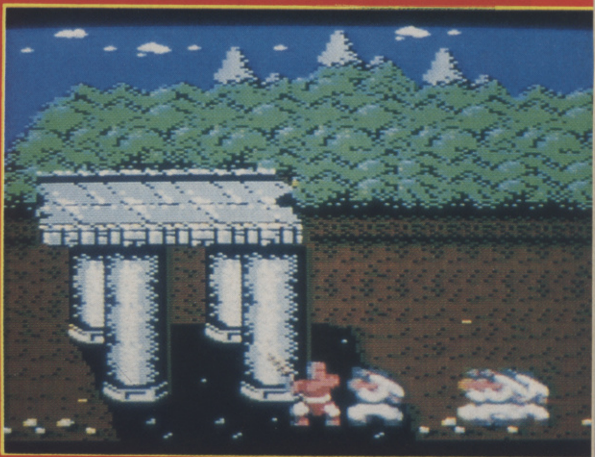
jump at least five times your own height!). You start off with an energy bar that decreases each time you are hit, when the bar runs out a life will be lost (you have five to start with).

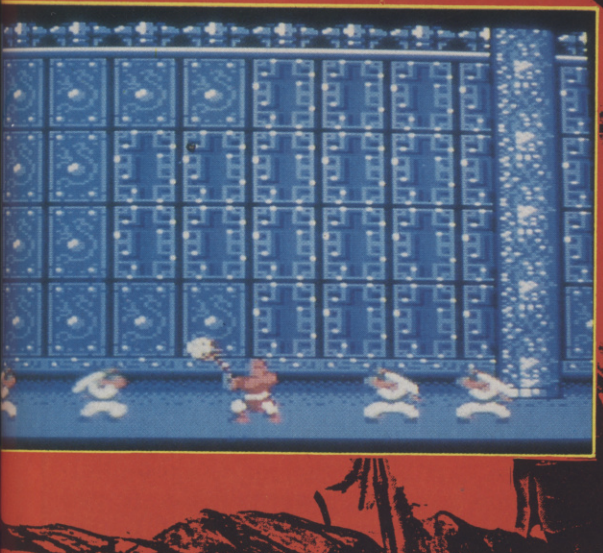
Each stage in a level is very short and I found each quite easy to complete, but there are four levels to the game so it should not be terribly easy to complete, too soon. On the other hand, I don't think you would want to play it to that extent because of the repetitive gameplay.

Tiger Road is typical of the quality that we are so used to seeing so much in arcade conversions, i.e. playable for a short period but with very little new or exciting features. the graphics are unremarkable, nothing we have not alrady seen before, although they are colourful in some stages. Sound too is okay but very unforgetable.

If you like the arcade game of Tiger Road, and want a substitute, you could be a little disappointed with this not too convincing conversion.

D.H.





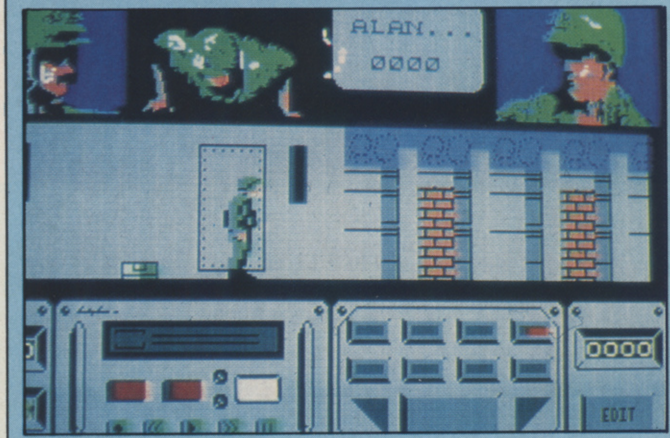
Graphics: 64%
Sound: 59%
Playability: 65%
Overall: 62%
Rating: CRISP

C64

Naff

ACTION SERVICE

Infogrames



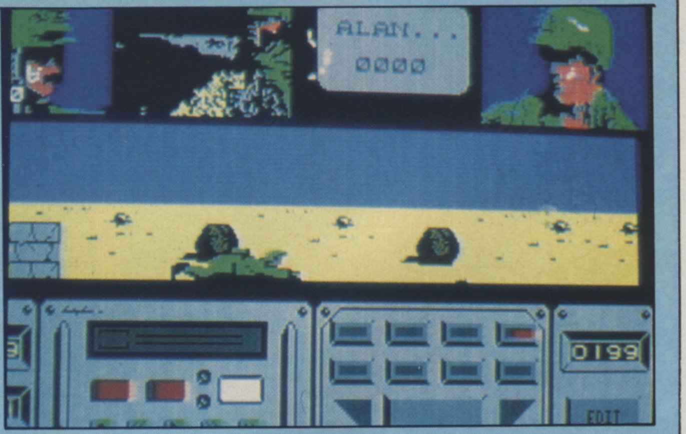
For such a successful game, Combat School inspired very few clones. Bar Ocean's official conversions, Action Service is as close as anyone has got to the coin-op, but programmers Cobra Soft have at least made an attempt to add some of their own ideas.

The first of these is the unusual options screen. Instead of menus, Action Service uses the control panel of a VCR for all the pre-game selections. From here you can choose to attempt any of four courses, view the high scores, enter your name or load the contruction set. I take it this was meant to be a more user-friendly method than the standard procedure, but as only one of the buttons is labeled, and half are without any function, the whole thing is far too confusing to be an improvement.

> *"The strange thing is that walls, and in fact all the obstacles, can be crawled through just as if they were holograms."*

Things get even worse once you get into the game. Rather than having a straight forward joystick control, Action Service uses a number of different modes to fit in all the available moves. Using this extremely awkward technique you have to guide your trainee commando over, under and through walls, tunnels and pits, whilst keeping an eye out for snipers and discarded fuel cans. The obvious thing to do when you come up against a brick wall is to climb over it. Time your jump accurately and you'll do just that. The strange thing is that walls, and in fact all the obstacles, can be crawled through just as if they were holograms. A very limited fight mode allows you to bruise a few fellow recruits along the way with head kicks and punches.

Graphics are blocky and unimaginative throughout. Sound is even worse; I counted three shy effects in the whole game, and the loading "music" is completely tuneless.



As well as being translated very roughly from French, the instructions are as poorly laid out as the rest of the game. A typical example is the diagram of the control panel with the key on a different page. Niggly, you may think, but it all adds up.

The little extras, the construction set, VCR front end, the control method, achieve the exact opposite of their of purpose. Combined they make a potentially passable game absolutely unplayable. If you haven't already got Combat School you'd be far better off tracking it down for an infinitely more satisfying yomp through an army training camp.

T.H.

Graphics: 36%
Sound: 8%
Playability: 23%
Overall: 22%
Rating: NAFF
Price: £9.95 (c)
£14.95 (d)

Charts

Chart Chattering Events

Oh yeah? Where are the events that will shatter or even set you chattering this month? Wake up, wake up! Yes, we know that you are out there somewhere but what you are buying in the games line is boringly the same as under the last moon.

It is true that there are new Number Ones for the 64 and the Cheapos but big deal, Robocop jumps all the way up to Top Spot from just one below and dear old Ghostbusters has spirited itself up two places to make the Proud 1 Look Down From Here on All of You position. What may be called an achievement (though in this stagnant month, I'm not so sure) is Ocean's taking the top three places in the 64 Chart, including the only really smash new entry, Dragon Ninja. Has one company ever taken such a grip on the Charts before? I can't remember it happening so that Manchester-based outfit deserves congrats.

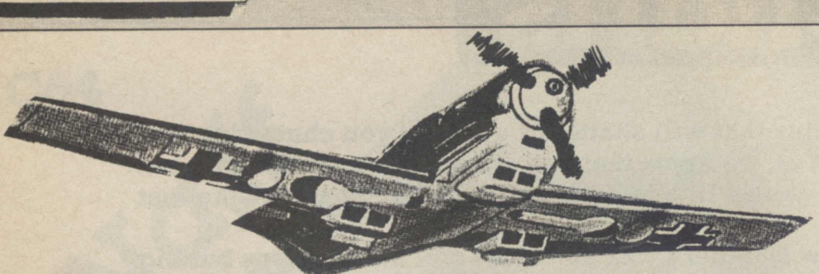
There are two interesting new entries on the 16 Bit Chart. Discovery's Sword of Sodan smashes its way in to breathe down the neck of the two month Number one, Falcon. We don't want to say "We told you so!" (Well, we do really!) but we (and our sister magazine Amiga User International) got a world scoop on that brilliantly created little number and informed you of its wild potential. One look told it was going to be a smash — and it is. (Discovery's Rick Ross is probably buying his second Rolls Royce next month). And Mirrorsoft is another software company that scores a triple out of the top five games. A couple of newies from the old firm, Masters of the Tronic, see them taking three out of the five budget places. Werewolves, knightmares and Ghosts — you could really say that Frank Herman's Gang are haunting the charts ... See you next month (If Mastertyronic doesn't frighten me to death first!) and watch out for International Karate Plus on the Amiga, it's mindbusting! Sayonara!

Z.M.S.

GAME TITLE	COMPANY	LAST MONTH	PRICE	RATING
1. Robocop	Ocean	(2)	£9.95	Mega
2. Operation Wolf	Ocean	(1)	£8.95	Crisp
3. Dragon Ninja	Ocean	(-)	9.95	Mega
4. Afterburner	Mediagenic	(4)	£9.95	T.B.A.
5. Thunderblade	U.S. Gold	(3)	9.99	Mega
6. Batman	Ocean	(6)	£9.95	Mega
7. Microprose Soccer	Microprose	(5)	£14.95	Mega
8. Double Dragon	Melbourne House	(8)	£9.95	Iffy
9. Emlyn Hughes	Audiogenic	(7)	£9.95	Awesome
10. R-Type	Electric Dreams	(10)	£9.99	Crisp
Amiga				
1. Falcon	FTL/Mirrorsoft	(1)	£29.99	
2. Sword of Sodan	Discovery	(-)	£24.95	
3. TV Sports Football	Mirrorsoft	(-)	£29.99	
4. Operation Wolf	Ocean	(3)	£24.95	
5. Dungeon Master	Mirrorsoft	(2)	£29.95	
Budgets				
1. Ghostbusters	Mastertronic	(1)		
2. Werewolf/London	Mastertronic	(-)		
3. Knightmare	Mastertronic	(-)		
4. Joe Blade II	Kixx	(2)		
5. Commando	Encore	(1)		

FIRST OVER GERMANY

SSI



'Bogey at 3 o'clock!' screamed the waist gunner, as he opened fire. Bullets tore into the right wing of the bomber, and one of the engines started to sprout smoke. The commander feathered at the propellers, and began to pray.

First Over Germany is a simulation of commanding a B-17 bomber over Nazi Europe. The simulation, being written by SSI, is well researched, and is based on the real life 306th bomber group of the USAAF.

At the start, a ten man crew for the bomber must be picked. Each crewmember has three stats, aptitude, experience, and stamina.

H
42-3102
BUTTERCUP

Aptitude is important for crew members such as the co-pilot, navigator, and bombardier. Experience is vital for all of the crew members, and experienced gunners can be very useful. Stamina is also important, for when it falls to 0, then the crew member is dead!

Generally, the more experience a crew member is, the less stamina. After the crew is chosen, then they are trained. The game also allows the option for gunnery practice. This entails being told where the bogey is coming from, and then picking an appropriate gun that can see the bogey. the gunners view is given, and joystick controls the gun sight in an attempt to shoot it down. A different shaped window is given according to which gun is picked, as a bit of realism. In fact, this probably the only concession to realism actually made by this game. After gunnery practice, off to training.

The first training mission is simply take off, cirle, and land. When taking off, an overhead view of the runway is given. At the bottom of the runway, there is a little bomber sprite. the bottom three lines of the screen act as an instrument display, with altitude, heading, flaps, etc. When all four engines are powered up, then the sprite slowly moves upscreen, taking off at the right speed. When the sprite leaves the screen, then the main flying view is given. Once again, this is an overhead view, but of a much bigger scale, so therefore the aircraft is viewed as a pixel sized dot. This dot is then guided in a large circle, as the bomber cannot turn very quickly, and lands in a similay way to taking off.

Flight simulator fans would be glad to know that a view out of the cockpit is possible, but only when flying in cloud!! Other training missions include joining a bomber formation (one dot joins moving formation of dots), and bombing a practice target. When the bomber (dot) approaches the edge of the current screen, then it re-appears on the other side of a new screen! There is not even asic screen scrolling, as a simulator in this way demands. The 'instrument panel', ie the bottom three lines of the screen, also constantly flickers, giving a nasty headache after ten minutes.

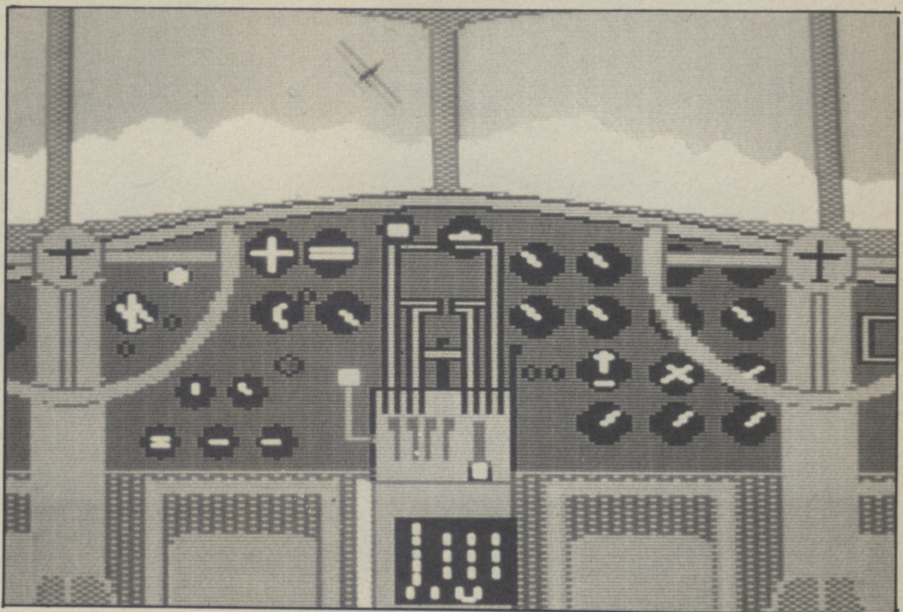
After each mission, an efficiency rating is given, and as the rating improves, then promotions are dished out.

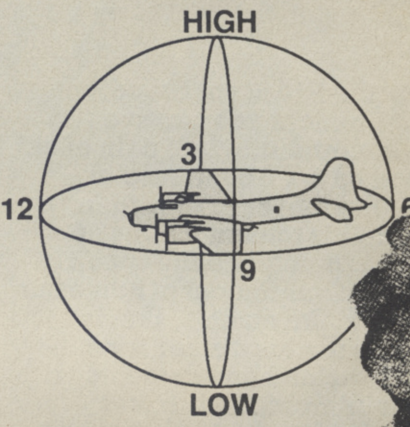
There are 25 combat missions, based on the real life missions of the 306th. During combat, various bits of damage to the bomber are possible from either enemy fighters or flak. When the bomber looks like dropping out of the sky, then the crew can bail out.

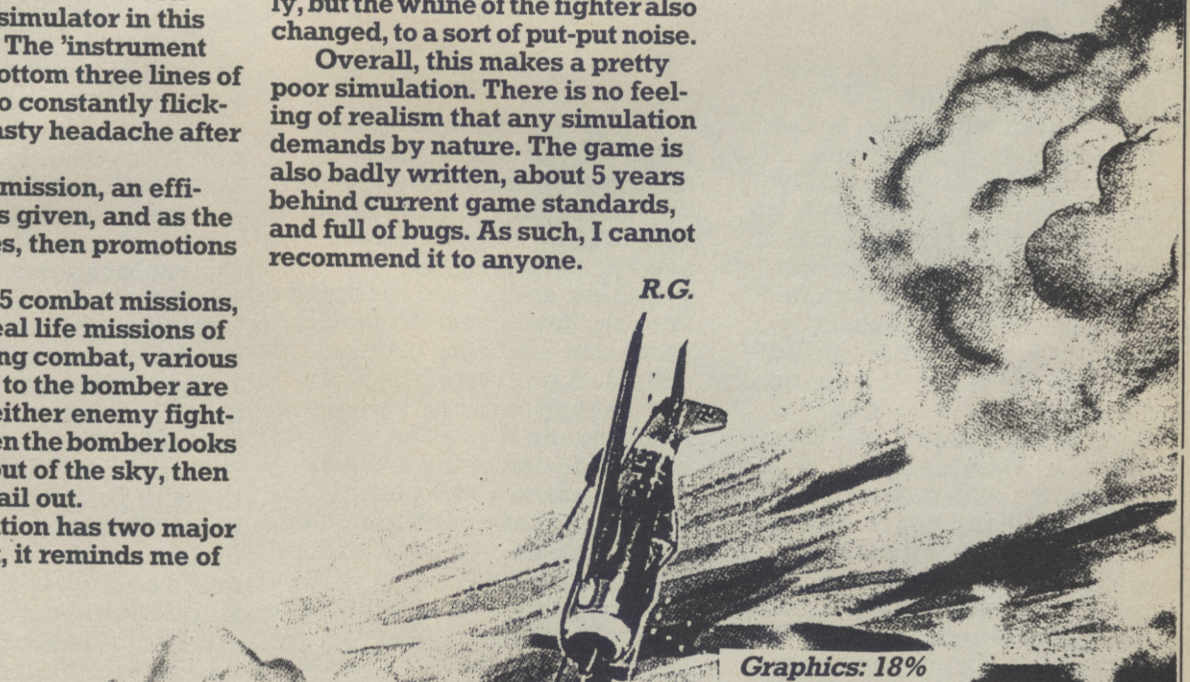
This simulation has two major problems. First, it reminds me of the type of game being released for the C64 soon after it was launched, and secondly, it is full of fatal bugs. The most obvious bug is the flickering information panel, but other bugs include crashing and returning to basic when my crew bailed out over Lille, (the bailing out routine is so bad it is funny, ie black parachute sprites dropping down!). The funniest bug was when an enemy fighter knocked out a bomber engine, the engine noise changed accordingly, but the whine of the fighter also changed, to a sort of put-put noise.

Overall, this makes a pretty poor simulation. There is no feeling of realism that any simulation demands by nature. The game is also badly written, about 5 years behind current game standards, and full of bugs. As such, I cannot recommend it to anyone.

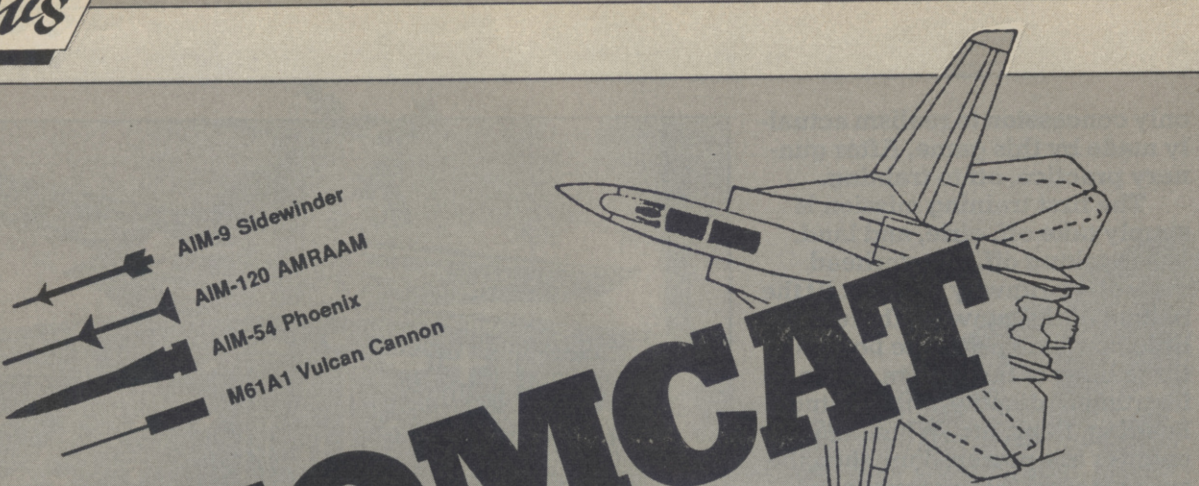
R.G.







Graphics: 18%
Sound: 10%
Playability: 25%
Overall: 20%
Price: £24.99



F14 TOMCAT

The F14 is not the sort of tomcat you can see munching into a tin of cat food on a TV commercial. Rather more sinister than that, this tomcat moves at more than twice the speed of sound, our tomcat at home can only make mach 1, that is when it's his dinner time. Activision have come up with this Tomcat, their latest simulation, and a very good one it is at that.

Following the recent trend in flight simulators, F14 Tomcat lets you enlist in the best flight training in the world. You must learn to fly and practice manoeuvres, go on secret flight missions and when you are good enough you will make it through to Top Gun School. Here, only a few get to match their skills against the best pilots in the US Navy. Your aim is to become, not only a Top Gun Ace, but eventually a Top Gun Instructor who can retire gracefully and not be carried home in a wooden coffin.

The main theme of the program is something like the film "Top Gun". You play the part of Tom Cruise (of course), without the beautiful blonde co-star I must hasten to add! Similarities may also be drawn to many of the other flight simulators around today. However, Activision have made sure that you get full value for money with F14, as the disc based version fills all four sides of the two game disks.

> ***"In the beginning your instructor shows you how to perform manoeuvres that will later probably save your life in a for-real combat situation."***

The program loads up many different parts from disc and asks you for disc swaps whenever they are required. The loading sequence is pretty neat with good graphics, sound and digitised speech. You are then asked to enrol into the flight training school. A picture of the F14 Tomcat appears and you are tested to see if you can recognise one of the crew or various parts of the plane before you may continue. Get this wrong and you get thrown out immediately!

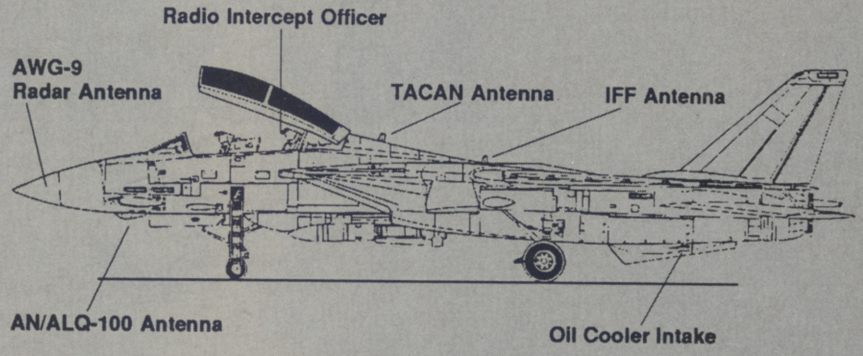
You will soon get used to the controls, there are many to learn. The joystick does all the flying stuff and 24 more controls on the keyboard do the rest. These are for weapons, head up display, rudders, maps and radar etc. The plane is easy to fly so progressing in the early stages is fairly simple, the one thing that everyone finds hardest, the landing, is done on autopilot using an ILS system, so taking the risk out of it. Another thing that really surprised me was the fact that you didn't have to retract or lower your undercarriage! This is probably to make the exercise of earning your wings that much easier as the road is long and hard to Top Gun School, the one time you forget your landing gear and you're dead . . . if you do crash however, you die and have to have to start all over again!

Most of the unnecessary ground details have been removed to make the screen scrolling as smooth and as quick as possible. The game gets harder and harder as you progress needless to say.

In the beginning your instructor shows you how to perform manoeuvres that will later probably save your life in a for-real combat situation.

Your instructor is a pretty mean looking guy who tells you off whenever you foul something up. I remember in the film Top Gun, Tom Cruise gets to fall in love with his instructor, well there is not much chance in this simulation. Tom Cruise was always there for the "de-briefing" in more ways than one! You must, however, keep your mind on the job.

When you move on to Advanced Jet Training you


Radio Intercept Officer
AWG-9
Radar Antenna
TACAN Antenna
IFF Antenna
AN/ALQ-100 Antenna
Oil Cooler Intake

practice dogfights against a challenging instructor. If you succeed he will give you a nickname that sticks with you throughout your career, the names are something like "Deadeye" or "Potato-Bug"! Next problem comes as you are reassigned to Final Flight Training, the dogfights are more like the real thing. Eventually you get assigned to one of the two Tomcat Fighter groups stationed on US aircraft carriers – the Jolly Rogers or the Black Aces.

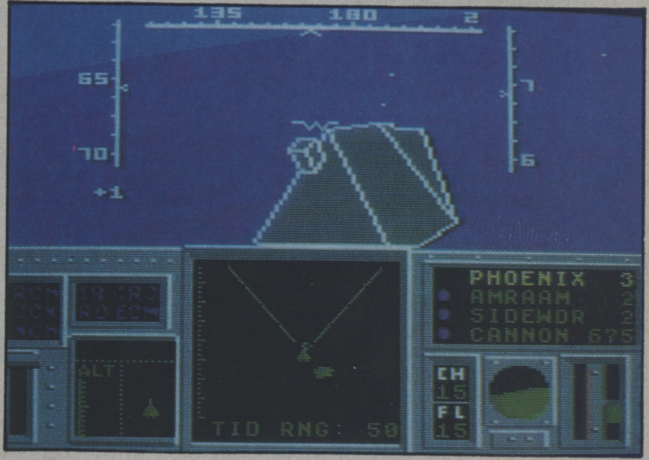
Then you undertake to fly the missions, unlike some simulators where you have to qualify for these, F14 Tomcat lets you into these missions without qualification, so for a good "shoot-em-up" in the sky it is not a bad buy and you may be awarded one of nine different medals.

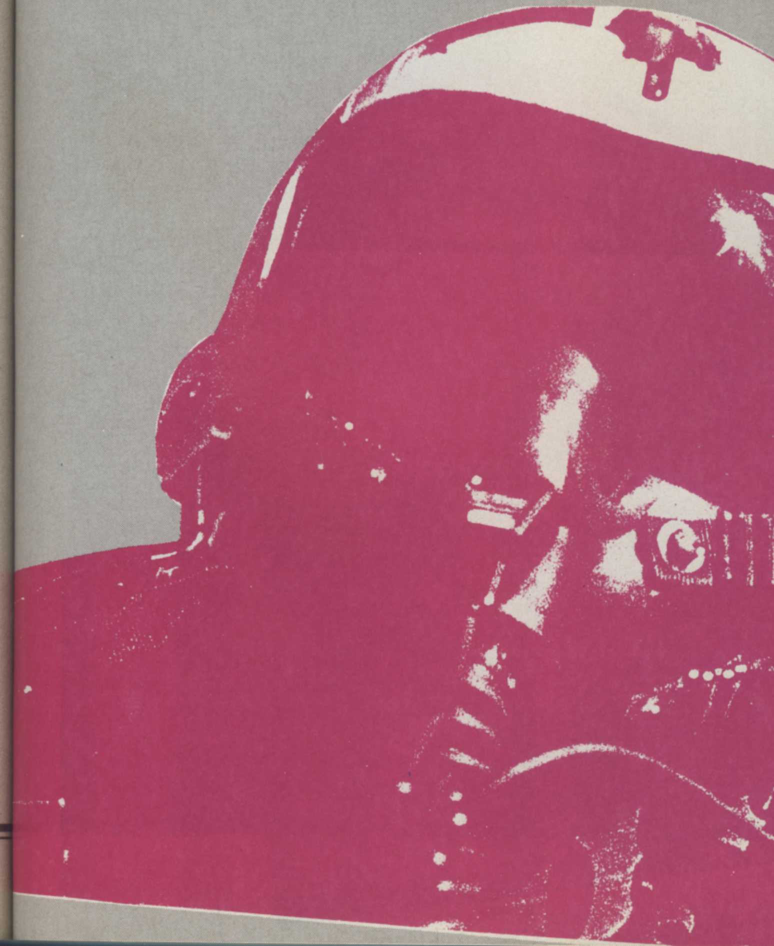
If you do well enough on carrier duty you will qualify for the Top Gun School.

In the course of your career you can take time off to relax in some choice locations, by the time you are ready to retire you should have more medals than the complete British Olympic Team! This program offers so much, so come on White Knights, get on your Fiery Steeds and fly.

B.C.

"If you do well enough on carrier duty you will qualify for the Top Gun School."


135
180
2
65
70
+1
PHOENIX 3
AMRAAM 2
SIDEWDR 2
CANNON 675
ALT
TID RNG: 50
CH 15
FL 15



Graphics: 70%
Sound: 65%
Playability:75%
Overall: 70%
Rating: Mega
Price: £9.99 (c)
£14.99 (d)

MORE PC GAMES

This month Len Keighley reviews two arcade and one adventure game. All three games are conversions from existing C64/128.

Apollo 18

This game, produced by Accolade, takes the form of a simulated Apollo moon landing mission. All the way from take-off, through mid-course correction and landing, to final splashdown. The game relies heavily on the use of hand/eye co-ordination to carry out the manoeuvers at various points in the mission. The mission itself is split up into various specific tasks each of which must be completed before the next task can be commenced. Each of the tasks is divided into sub-tasks, failure in any of these will result in the mission being aborted. This does not always mean the end of the game, some just abort that particular task and move on to the next. This does of course depend on the impact of the task on the overall mission. Failure in the mid-course correction result in the spaceship carrying on into outer space while in the moon landing phase the mission continues with the homeward journey. One unusual task include on the homeward journey is the capturing of three wayward satellites which must be captured and returned to the Earth.

Each task and sub-task is scored with an overall average of 25% being the aim. Scores above this mark will be included on the league table at the end of the mission. In each task use of the Telemetry screens is required upon which various actions must be carried out before permission to 'Go' is received.

These carry out various manoeuvers required in the task, such as the deployment of the chutes on landing. The best 'program' is that used to separate the Command module from the Lunar Module shortly after take-off. The human is then left to re-connect the two before another 'program' is used to lock the spaceships together.

The use of graphics in the program is good, especially when the spacecraft is shaking during the re-entry task. The program certainly does give the feel of being involved in an Apollo mission. From this aspect it would make a good gift for children especially those who were not around during the actual Apollo excitements. As a simulation of real events the game is very well written and makes for an unusual and compulsive entertainment.

Distributed by Electronic Arts *Price: £24.95*

PMH PEGASUS

This is a more traditional shoot-em up game where the player is in command of a 'Patrol Hydrofoil Missile Craft'. The game is marked by Electronic Arts but was written by the Lucasfilm.

The game is in the style of Destroyer but with fewer screens with which to contend. The main screen shows the instrument console including a view of the sea ahead of the hydrofoil and an binocular view of other parts of the sea, this is also used for the targeting of weapons. Another screen displays a map of the patrol area.

Playing the game takes the form of various missions which if successfully completed will result in your promotion through the ranks. These range from lieutenant for the easiest mission, Battle Training, up to Admiral for the hardest, Jihad. The Jihad mission involves the escorting of a supply ship out of the Persian Gulf, which is to say the least a topical issue if no longer current. Overall there are eighteen missions with various complexities and rankings. The rank attained depends on the number of points accumulated through the mission. More points are given for completing the mission than for shooting up enemy vessels.

The Bridge instrument display gives details of the weaponry supply and the current damage to the hydrofoil. Single hits will not destroy the hydrofoil but may leave you without some weapons. The weapons at your disposal are cannon and missiles with chaff if any enemy missile locks on to your ship. Each of these must be selected and only one can be fired at any one time. The keyboard can be used to control the direction of firing but a joystick makes for easier use. However, if fitted the joystick is also used for controlling the direction of the hydrofoil, the spacebar is used to toggle between the two and this can be confusing.

The game is usually played in real time but the passage of time can be increased to up to 128 times.

An interesting feature of some of the missions is controlling of other vessels and equipment. PHM Pegasus is equipped with two search helicopters and these are again controlled by use of the joystick. Missions that involve the movement of other ships, such as in a convoy, are also under your control. Unfortunately, a view of the situation from the helicopters and ships is not provided, and orders for the movement are made via the operations map.

At the lowest levels the game is easy to play with very little action involved. However, in the more difficult levels the game lives up to its true potential. With most shoot-em up games being of the space variety PHM Pegasus is a welcome change.

Distributed by Electronic Arts *Price: £24.95*

ULTIMA V

This, as its name suggests, is the fifth in the Ultima series and is written by Origin Systems Inc and distributed by Micropose. This episode in the saga is subtitled 'Warriors of Destiny' and characters built and used in Ultima IV can be converted to this new game. The game concerns your involvement in a quest to save Lord British who has been captured while on another quest in the Underworld. You are called from your home in another world to be transported to Brittannia to aid in this adventure.

The game involves moving around the Brittannian landscape, investigating various buildings that can be found in that country. Two other parts of Brittannia must be explored which are the dungeons and underworld that exist in that country. Movement can involve the boarding and sailing of a ship to reach other parts of the country.

Three windows are used on the screen to show a portion of the immediate area in which your character is situated, the status of the characters and the command window. The map area is in the same form as that used in a number of adventure games that have been available in the past, from 'Temple of Apshia' on the PET to 'Rogue' on the Amiga. The picture scrolls both up and down and from side to side, however, the graphics are simple and do not add a great deal to the playing of the game. The adventure consists of the usual elements involving the collection and use of various items, the casting of spells and battles with weird and frightening creatures. Other characters in the game must be 'talked to' to obtain the clues which help you to complete the quest.

The game is simple, if not lengthy, to play and depends on your puzzle solving ability rather than your dexterity. Microprose always package their products well and this is no exception. As well as the four 5¼ disks, containing the software, there is a 54 page 'Book of Lore' which provides details of the politics and structure of Brittannia as well as its folk legend and terrain. In addition to this is a reference card containing the commands, a chart of spells and a short description of how Lord British was lost. Finally, a replica of the talisman and a map of Brittannia, printed on cloth, complete the contents.

Distributed by Micropose. *Price: £24.95*

L.K.

C64

ROCKET RANGER

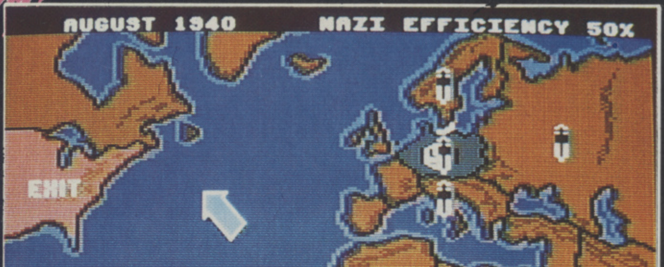
Mirrorsoft

Rocket Ranger on the Amiga has to be one of my all time favorites, maybe it's because of the truly atmospheric gameplay or it could just be because of the stunning graphics and equally good sound. It would be a job done well if the programmers could convert it over to the 64 half as good as its predecessor because of the 64's limitations.

Time starts long ago in the year of 1940 when Hitler and his Nazi troops begin their mission to become supreme rulers and take over the Universe. You, Rocket Ranger are the only one who can stop this destruction from continuing. You sit helplessly in your lab going over and over plans to crush Hitler and his troops but none seem realistic, when suddenly a bright spark lights up the room. You blink and rub your eyes, but can't believe the magical wonders that lie before you – your prayers have been answered!

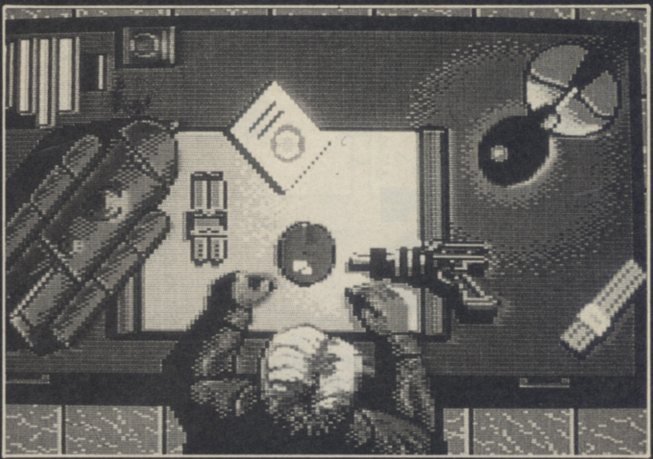
> *"Your gifts include the most important device, the rocket pack (which lets you fly), a radium pistol, a rather handy wrist monitor and a secret decoder wheel."*

These objects have been sent from the year 2040 in a time where the world is run by Nazi's following Hitler's victory in WWII. You can erase this terrible mistake by defeating them before they win with the help of your futuristic equipment, and effectively changing history! Your gifts include the most important device, the rocket pack (which lets you fly), a radium pistol, a rather handy wrist monitor and a secret decoder wheel.



In the opening sequences you are given a brief run down of your mission and all the baddies and goodies involved accompanied by a very war like soundtrack to get you in the mood. The main screen lists the different options and statistics which can be look at or used at any time during the game.

The Germans have been developing the rocket

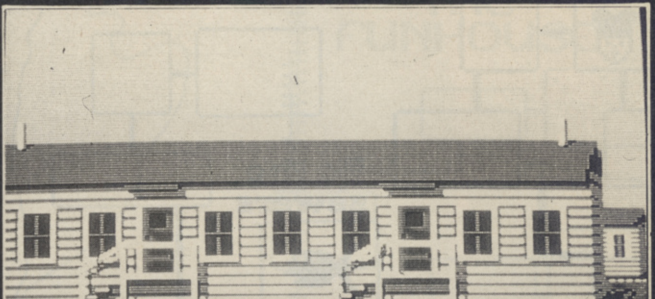


ship and now have a whole fleet which flies to the moon and back transporting large quantities of a very special fuel, called lunarium, found on the moon. You must discover the four components of a rocket which can be found in different parts of the world, then build a rocket that can fly to the moon.

The game is made up of a great many little sub-games linked up in a way to bring the game together. They range from a dogfight with German fighters over the Atlantic to a punch up with a guard. To enter a sub game you will have to use your rocket pack and some lunarium fuel to fly to your destination. To find out where the action is you will usually have to look in the war room. Here you see a map of the world showing where your spies are located. If they have any important information they will start to flash, then you can read the report they give and decide whether or not you want to go there.

Lunarium is vital to you because you need it to fuel your rocket pack. So if you fly to a country where nothing is happening you will waste valuable fuel as well as time. If you are told, for example, that Jane (a girl who has to be rescued) has been captured and is flying over the Atlantic in a Zeppelin, you look at your decoder wheel to see how many units of lunarium are needed to reach her.

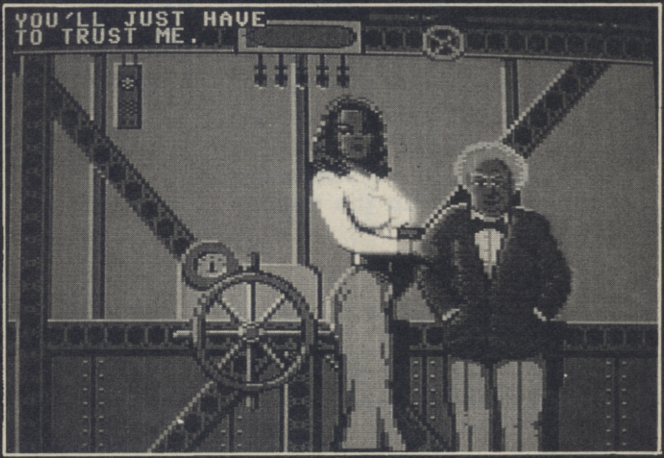
Now comes the takeoff sequence. Each time you want to take off you have to go through the same routine. You start off at the far left of the screen and run to the right as the screen scrolls with you. Each time you take a step you have to press the button, when you have reached a certain speed a little beeping sound will follow to tell you to press the joystick up and away – incidentally this is much easier than on the Amiga.



All the sub-games are great fun to play and master, and all involve different actions and skills, or in some cases just practice. For each different sub-game there is an individual and distinct soundtrack which adds to the game's eerie atmosphere.

The only mentionable fault that I experienced was the way that you are constantly changing disks in and out of the drive. Apart from this the presentation is excellent and has obviously been carefully planned.

The main problem with other Cinemaware games was that although they had outstanding graphics the gameplay lacked a certain something. Rocket Ranger, however still has the excellent graphics and the addictive gameplay to match. The sound throughout the game is as good as any Cinemaware game with lots of varied sound effects and soundtracks (and there is some speech too).



"Rocket Ranger on the 64 is one of the best conversions I have ever played, losing little if nothing in the gameplay area."

Rocket Ranger on the 64 is one of the best conversions I have ever played, losing little if nothing in the gameplay area and graphics and sound are as close as they could be to the original. So, if you were one of the people who envied all Amiga owners with Rocket Ranger, now's your chance to get even – go out and buy it today (as long as it's not a Sunday, that is!).

D.H.

Graphics: 92%
Sound: 90%
Playability: 88%
Overall: 90%
Rating: MEGA
Price: £24.99

HORGAN'S HINTS

Hopelessly lost in Ocean's Batman? Keep getting killed off by constant attacks from immortal baddies? I know the feeling, and that's why I've seen my way clear to mapping out the Joker adventure for you. You'll also find infinite energy pokes for both adventures, but don't expect it to be easy even then! Take a stroll through the rest of the hints and you'll stumble across tips for Space Harrier and a guide to all those cheeky messages hidden within the depths of IK+.

64

Batman

Enter and run the listing for infinite energy in part one.

```
10 FOR I = 384 TO 432:READ A:POKE I,A:NEXT
20 SYS 384
30 DATA 32, 86,245,169,32,141,92,3,169
40 DATA 147,141,93,3,169,1,141,94,3,96
50 DATA 173,89,1,201,32,240,4,173,5,220
60 DATA 96,169,169,141,89,1,169,1,141,90,1,96
70 DATA 169,181,141,159,125,76,32,6
```

Do the same for part two, but change the last line to:

```
70 DATA 169,181,141,210,126,76,32,6
```

AMIGA

Space Harrier

Points to bear in mind:

1. To survive the dragon sequences, move around the edge of the screen and back to the middle as he retreats, getting in as many hits as possible.
2. When you get to a stage with a lot of towers, use the checked floor to line yourself up in the gaps.
3. Never stay in one place for more than a second or so. This way the missiles don't get chance to lock on to your position.

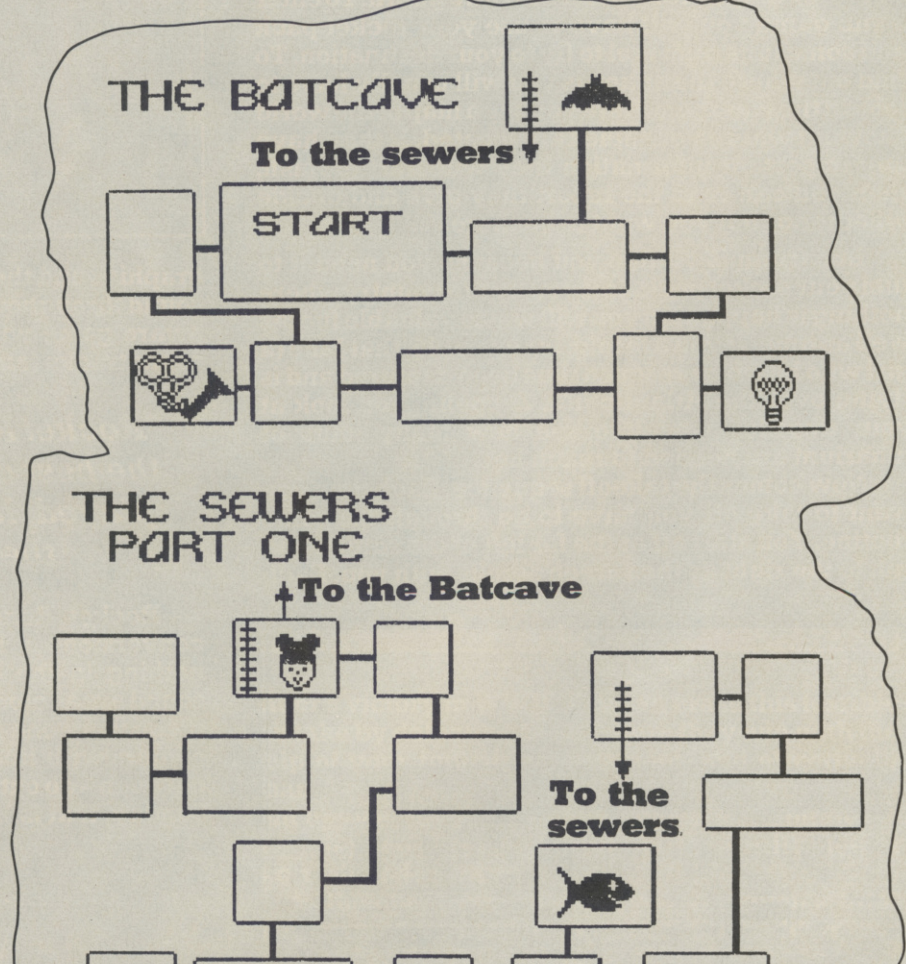
IK+

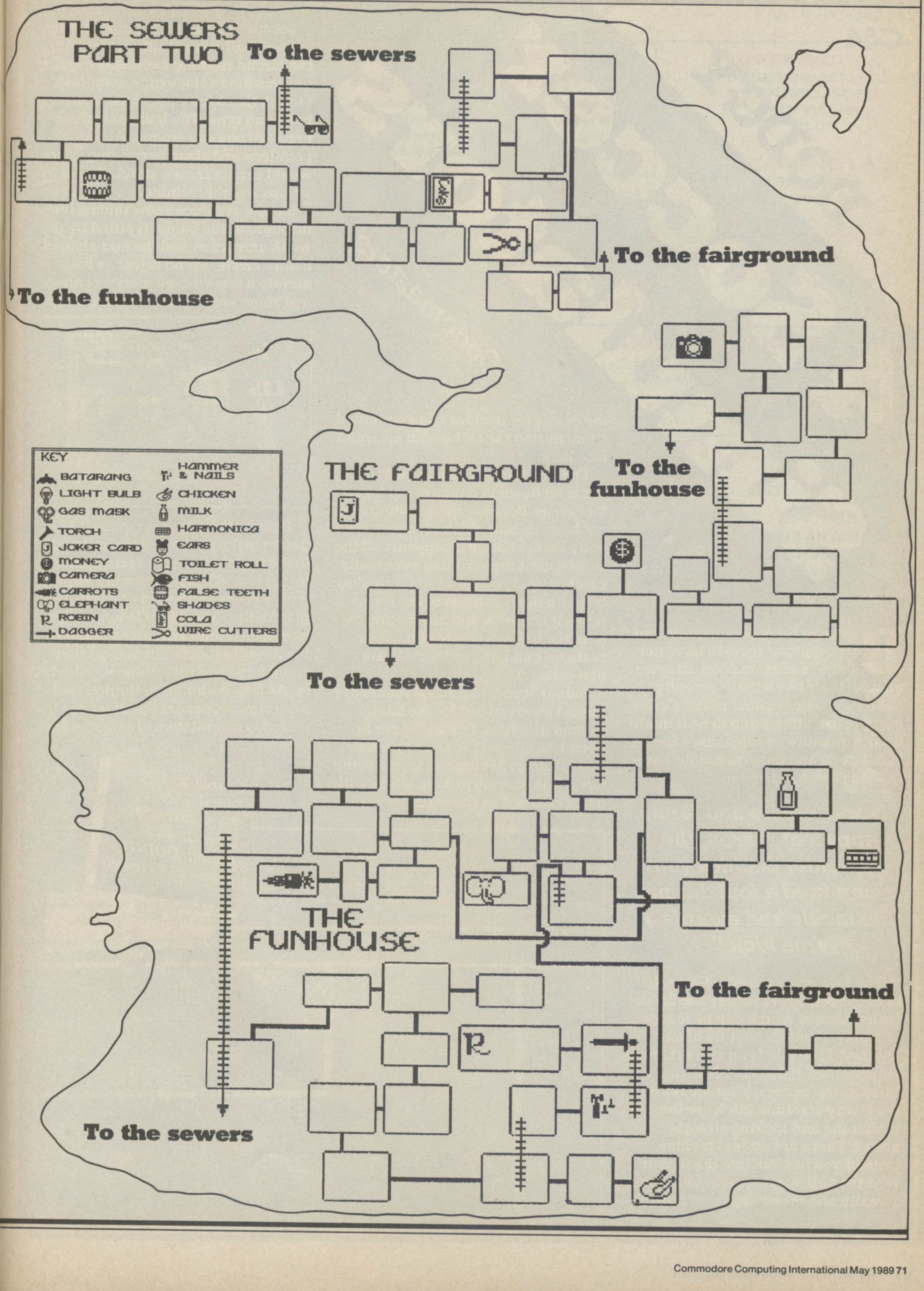
Type in the following codes during a game for hours of side-splitting laughs:

PAC FISH BIRD PERI FREZ SUNL JUMP ANGL SIMR GPZP FOOK STEW GLZP ANBK EDHK SHAH

That should keep you going for a bit, but once you've saved Robin, banished the monsters from Dragon Land and giggled your head off at IK+, why not let your fellow readers in on all your best hacks and maps? Get them to me at:

HORGAN'S HINTS
CCI
40 BOWLING GREEN LANE
LONDON
EC1R ONE
Tony Horgan.




THE SEWERS PART TWO
To the sewers
To the fairground
To the funhouse
THE FAIRGROUND
To the funhouse
To the sewers
THE FUNHOUSE
To the fairground
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ROBIN
DAGGER
HAMMER & NAILS
CHICKEN
MILK
HARMONICA
EARS
TOILET ROLL
FISH
FALSE TEETH
SHADES
COLA
WIRE CUTTERS

C64

DODGY

4 Soccer Simulators

Codemasters

Between them, Audiogenic and Microprose seem to have got the 64 soccer market all sewn up with their two superb recently published soccer simulations. Codemasters are attempting to beat quality with quantity by releasing 4 Soccer Simulators, and unsurprisingly have failed to come out on top.

> *"Occasionally and for no apparent reason, the computer decides you committed a foul during the tackle and awards a free kick."*

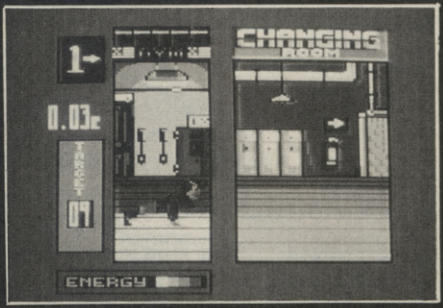
The four games are 11-a-side, Indoor Soccer, Street Soccer and Soccer Skills, each of which can be loaded and played independently of one another. 11-a-side is no more than an empty clone of Sensible Software's Microprose Soccer. Your moves on the 8-way scrolling pitch are limited to running and kicking straight ahead. There are no real tackles, instead you just run into the player with the ball to gain possesion. Occasionally and for no apparent reason, the computer decides you committed a foul during the tackle and awards a free kick.

The first game is nearly quite good, but is let down in a number of important areas. Because the scrolling cannot keep up with the ball, every time you pass or shoot, it disappears off the screen until the scrolling eventually catches up. The absence of a shadow beneath the ball leads to confusion when it bounces, and attempting to pass the ball is a waste of time, so realistic build ups and tactics are non-existent.

Indoor Soccer and Street Soccer are almost identical but for the background graphics. Indoor Soccer is even less interesting than 11-a-side, and all Street Soccer has to add is the novelty in playing in back alleys with goals chalked on the walls.

Soccer skills is a set of circuit training and ball control sub-games. All the circuit training exercises require various kinds of joystick waggling, though thankfully not of the wrist-breaking type. The ball control sections are equally simple. All are pointless, and about as exciting as you would expect from a simulation of sit-ups weight-training.

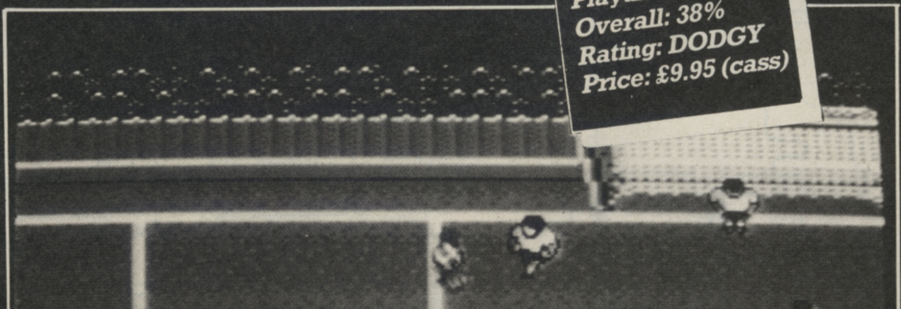
Sloppy graphics show themselves throughout the game, typified by the weak animation and the egg-shaped centre circle. Sound is just as bad; merely a few whiney pieces of music and some very sparse sound effects.



Despite the apparent quartet of games in the package, the similarities in the first three reduce this, in effect, to just two. All are extremely limited, with a severe shortage of depth and playability. Maybe if Codemasters had pooled their resources and written a single soccer simulation they could have had something worthwhile. As it is, both Emlyn Hughes and Microprose Soccer wipe the floor with this compilation of sub-standard games.

T.H.

Graphics: 51%
Sound: 22%
Playability: 39%
Overall: 38%
Rating: DODGY
Price: £9.95 (cass)



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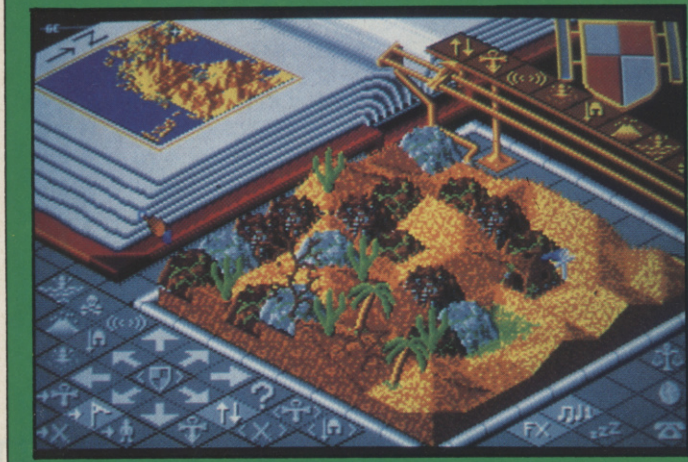
First Step in 68000 ASS Language	£9.95
GFA Basic Advanced Programming	£11.95
Using ST Basic on the Atari	£5.95

Popu

Have you ever wanted to be high on Mount Olympus, staring down through wafting clouds at the poor mortals below? Electronic Arts is giving you the chance and more with its latest chess/graphic/strategy game, Populous. From the opening screen perspective, immediately you are in the (sometimes hot – if you are playing the evil force) seat of the Gods, with volcanoes, floods, and various other natural disasters at your command.

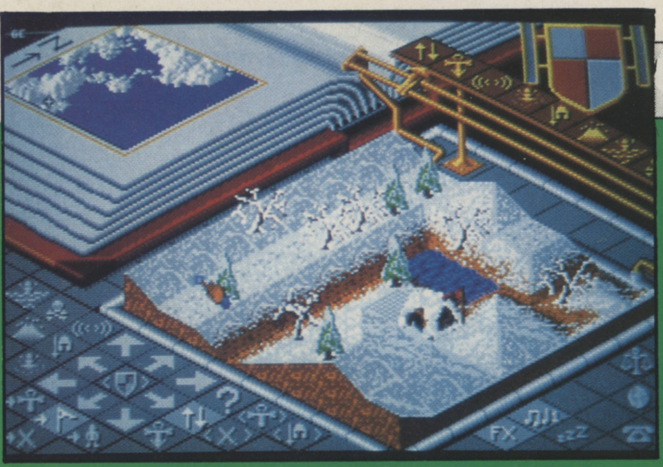
The object of the game is as old the universe itself: good vs evil, with you deciding which force you want to be. As a divine being, you must populate your lands, deriving your power from the more followers you acquire and the greater achievements you accomplish.

You begin each game in a particular world as a Good Supreme Being (though you may change to evil, if you like), and you must defeat the other deity and its population. You begin on the Genesis world, and each time you conquer a world, you are given the name of another, depending on your final score. The greater the score, the more advanced you become.



Play options include one player, two player, or computer vs. computer. You can even play by modem.

'Whilst I found the early worlds to be somewhat easy (as you are given all the options for power, while the computer is fairly muzzled), watching the computer play itself is worthwhile to pick up hints and tips of world creation/destruction.'



The screen is divided into five parts, some of which you can control, and some of which are different indicators (location, strength , etc.) In the top left part of the screen, you can watch the entire world. By clicking on diffent sections, the close up view of the area appears in the middle of the screen. A cross remains on the map to indicate your location. Red blinking dots on this map indicate evil settlements and blue ones indicate good settlements.

Different icons line the bottom, lower right and top right of the screen. At the lower right the icons control the games parameters, whilst those at the bottom are your controls for actual game play. The icons at the top serve only to signify your divine power. An arrow rides along the Manna bar, in front of the icons, indicating your strength and therefore which commands you have at your disposal. Each command, which ranges from lowering and raising land to creating floods and mountain ranges, affects your strength differently. During game play, you must keep a watchful eye on your Manna bar.

Each deity needs a leader, the first one to touch the deity's Papal Magnet carries the Ankh around. He is the only subject, or Walker, you can directly control. By using the Query icon, you can attach a shield to your leader, or any other person, to check the individual level of good and evil. The information

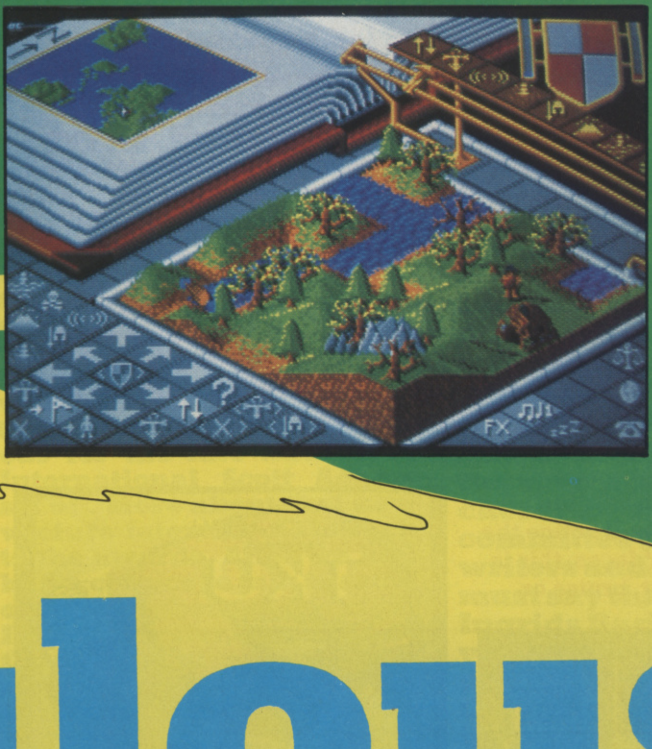
'The playability can be as quick as you like, which is one of the many nice features of the game.'

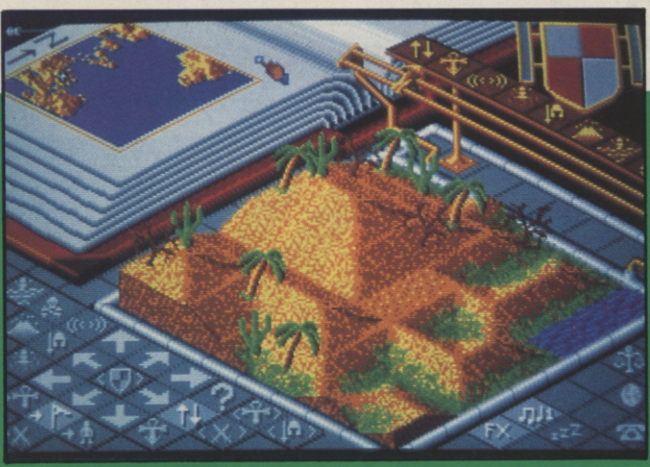
appears in a shield at the top right of the screen, and will remain attached to the last individual you have 'queried'.

The graphics in the game are very 3D, and as you raise and lower the land, creating mountain ranges and swamps virtually at will, there is a strange sense of power (no kidding) that overtakes you. It is very easy to get carried away with generating landmass, especially when trying to mess the enemy about; so, it is important to keep in mind the strategy behind all of your actions.

> *'Whilst I found the early worlds to be somewhat easy (as you are given all the options for power, while the computer is fairly muzzled), watching the computer play itself is worthwhile to pick up hints and tips of world creation/destruction.'*

The sprites are very small and somewhat stick-like, serving to represent greater numbers of people. You realize how well your people are populating by watching the big map. The people will follow the Papal Magnet, which you must take care to place in the proper place, and you can instruct them to populate around people or around buildings. In any case, they prefer flat ground, with houses needing less ground and castles needing larger areas. The longer you allow them to settle, the greater the developments.





You control those developments by strategy, using the behaviour commands. For example, you can move your Papal Magnet to an enemy area and then use the battle mode to tell your walkers to look for the enemy and attack them. Another option is to create a Knight, who will fight the enemy and burn their lands. Each option, depending on its outcome, takes different levels of strength.

'The playability can be as quick as you like, which is one of the many nice features of the game.'

You can alter the speed and aggression of the game, and thus your odds as well. Clever sampled sound effects accompany the volcanoes, floods, and other catastrophes you invoke, whilst a heartbeat indicates your strength.

I have explained only a few of the options that Populous provides the games player because to do more might take up thirty pages (or more!). You win by defeating every last subject of the other deity — which can take up quite a bit of time. No matter — the game saves to the disk. Or, if you are especially feeling god-like, you can invoke Armageddon, during which both Papal Magnets are moved to the center of the world and both populations will uproot their homes and head to the magenets. Once there, they fight until only the winner remains.

Populous is a very challenging 'game' to play, with over 500 worlds to test your ever growing god-like power. With the inclusion of so many parameters, and such a variety of landscapes, you will find many, many hours of enjoyment as you shape and create your world in this fascinating and highly stimulating program.

Populous puts a new twist on the compliment, 'Dahling...you are absolutely divine,' and makes you think twice about the word icon. It may not appeal to the fans of the simple shoot 'em up but for anyone who wants a game that is exciting and out of the ordinary, it is highly recommended.

N.P.

ulous

Electronic Arts

Graphics: 92%
Sound: 88%
Playability: 90%
Overall: 90%
Rating: MEGA
Price: £24.99 (d)

C64

CRISP

Accolade

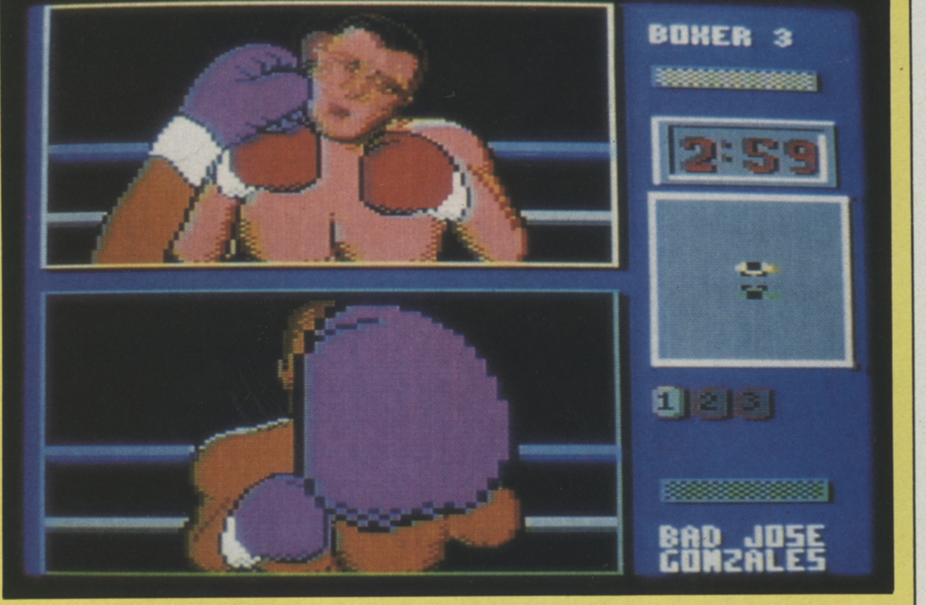
T.K.O.

If you are fed up waiting for the latest hyped up world title match to get underway then maybe a boxing simulation is in order to get you through the weeks leading up to the big fight (all 5+ seconds of it!). T.K.O. puts you right where the action is, in the centre of the ring, eyeball to eyeball against your opponent. As Bruno unleashes yet another deadly blow to Tyson's gut.....Ooops, sorry, just getting a bit carried away (a bit like Bruno!). But T.K.O. really makes you feel as if you are there inside the ring because of its new and original approach to a well-worn theme.

The screen is split into horizontal halves with player one at the top and player two/computer opponent down below. Both boxers look out of the screen so that you can see face-on punches that land on both players, giving it a real life look. On the right hand side of the screen is an overhead view, which shows the position of the players inside the ring.

The programmer's main aim was to produce a program that allowed the player(s) to get straight into the game without any unnecessary and disconcerting options or information, to make it as realistic as possible. And to an extent, they have achieved this task well.

Either one or two players can take part, but in two player mode it is just a simple friendly(?) knock-about with nothing to follow, whoever wins. If, however you want to take part in a one player game, there is a title quest where you will be up against four other challengers and the champion himself. Individual boxers have their own styles but more or less the same abilities.



You can decide whether you want a three, five or ten round match, each round lasting three minutes.

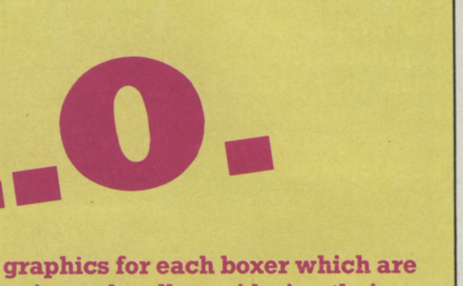
After each round a list of statistics shows the player who won the round, the points scored by each player, how many head punches that were blocked and so on.

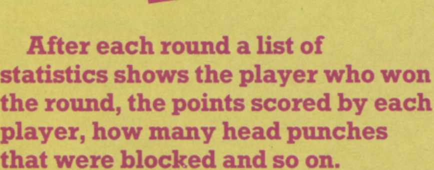
Each player has an energy bar which decreases the more he gets hit or if too many punches are thrown. When an energy bar is completely gone the player will hit the canvas on the next punch, the screen then changes to a picture of the referee counting out the decked boxer.

After you have been battling away for a while you will notice the change in the players' faces, this is to say that you can cut, bruise or even break your opponent's nose. The general effect of the graphics is convincing, using very large graphics for each boxer which are animated well considering their size. The sound though, isn't very good, using poor white noise sound FX with little else.

If you are not too keen on the sport you may find T.K.O. a bit inadequate for your needs, but if you are on the lookout for a boxing simulation with something a little different from the usual stuff, T.K.O. might be just what you're looking for.

D.H.





Graphics: 73%
Sound: 32%
Playability: 67%
Overall: 66%
Rating: CRISP

Adventure

BY ANDY MOSS

THIS MONTH ANDY MOSS ATTENDS THE ADVENTURE AWARDS, GETS A PREVIEW FROM ACTIVISION, AND FORAYS INTO MIDDLE EARTH. ALL IN A MONTH'S WORK. . . . . .

Welcome back heroes one and all to this months adventure package, and what a busy month for yours truly. First and foremost, pride of place must go to the Annual ADVENTURERS CLUB GOLDEN CHALICE AWARDS which this year was held at the Sherlock Holmes Hotel in Londons Baker Street. A glittering occasion it was too, with quite a number of software houses present and a few fellow hacks including Keith Campbell and Tony Bridge. Magnetic Scrolls, Activision, Electronic Arts, Mirrorsoft and Level 9 were the main contenders for prizes although I was introduced to a new adventure house called HORRORSOFT, which is run by none other than Mike Woodruffe famous for the late Adventure International Scott Adams set up. More about that new venture later, for now back to the awards. After we had had a chance to talk to some of the members of the club, Henry Mueller, Director of the esteemed organisation stood up and announced the winners.

BEST MAIL ORDER ADVENTURE HOUSE
Xenobi Software.

MAIL ORDER ADVENTURE OF THE YEAR
Dr. Jekyll and Mr Hyde by Essential Myth.
BEST ROLE PLAYING GAME
Dungeon Master
SOFTWARE COMPANY OF THE YEAR
Magnetic Scrolls
FELLOWSHIP AWARD FOR SPECIAL SERVICES
The Austin Brothers of Level 9
BRONZE CHALICE
LEGEND OF THE SWORD
SILVER CHALICE
JINXTER
GOLD CHALICE
INGRIDS BACK

The three chalice winners were voted for by the membership of the Adventurers Club, whilst the special awards were chosen by a select committee of adventure writers and reviewers. I must say that the winner, Ingrids Back although very witty and well produced for me was not the best thing the Level 9 have produced and FISH was by far a better game. Still it just goes to show that not every one has taste! Thanks for an enjoyable evening and here's to next year.

PREVIEW

MILLENIUM 2.0
AGVISION

Last week I travelled up to Activision to get a preview of a new major strategy space quest adventure that is nearing completion. MILLENIUM 2.0 is a game of mammoth proportions that is beautifully drawn (see pics) and has been researched to such an extent that everything that happens in the game would in fact happen in real life given the same situation. For example all the planets positioning in relation to the Sun and their distances from each other have been mathematically worked out, and all orbits are programmed to circle just like they really would had you been there yourself.

The story of the game is that you are on a base on the Moon in the future, and Earth has become uninhabitable due to an asteroid hitting it and rendering the atmosphere poisonous. All life on Earth has ceased, so it is up to you to try and fathom out how to build a terraforma machine which will transform Earth's atmosphere and promote new life and ultimately getting you back home.

More Adventure!

The Terraforma machine is the ultimate in sophistication and research and can only be constructed after you have all the major ingredients from other planets resources through mining. You can only mine once you have established a base there. You can only establish a base once you have transported people there. The people can only go there once you have found out it can support life. You can only find that out by sending powerful probes out to test the planets resources. The problem with the probes are that they require a lot of materials to build them along with special technology and a lot of solar power to generate the base building facilities. Your problem at the start is that you do not have a lot of anything, and need to slowly build up your base before you can do anything. Put more than one department to work and you soon find you do not have the power to drive them all. You need to build more solar panels, but they take time to build and that stops your research department from inventing new probes etc. All this and then you find there is a rogue colony on Mars who is out to stop you doing anything that concerns The Earth. At later stages of the game you could have up to forty craft going to different places getting different things, think you could keep up with it all. I know this may not seem like a traditional adventure to you, but I feel today's adventurers should be prepared to look at as many diverse games as possible and this is something refreshingly different and will be out in May. Look out for it.

ADVENTURE NEWS

HORRORSOFT NEW ADVENTURE LABEL

Mike Woodruffe, the brains behind Scott Adams graphic adventures at Adventure International has been hard at work these last two years, perfecting a new adventure system that is "totally animated, has sampled sound and graphics that are better than Mag Scrolls". Their first release is entitled PERSONAL NIGHTMARE and is an icon driven animated horror adventure about your own personal nightmare. Horrorsoft, who are being published through Tynesoft claim that you will be terrified beyond your wildest dreams. I saw a video they provided me of a few sequences from the game, and I can tell you that some of the scenes are extremely well designed and the animation seems to work quite well. Time will tell whether this is a truly "next generation" adventure system, meanwhile they have aquired the rights to use ELVIRA (the American Princess of horror) as their spokesperson. I can't wait to be bitten!

BALLYHOO

Crack the whip at the smooth lion three times. Clap hands before asking the roustabout to get the safety net. Turn the dial on the radio to 1170 and take it somewhere high to get a good reception.

STATIONFALL

Put the explosives in the thermos. Turn the jammer off to get rid of the forklift. Lick the dots in the alien ship.

ADVENTURE REVIEWS

ZORK I (cassette version) ACTIVISION/INFOCOM £9.95

Been a long time coming this, and although the flavour and atmosphere is all here, the locations and text have been drastically cut down to get the whole game in on one load.

A few words of warning though if you are thinking of purchasing this version of ZORK; for a start, in the instructions the HINT routine is described in detail. The truth is there is no hint routine in the cassette version, sloppy editing there from Activision. My copy crashed when I visited the mound of leaves on the forest path. When you disturb the leaves and uncover the grating and go to open it you get an INTERNAL ERROR 04 and END OF SESSION. Nothing to do but load up again, and by the way, loading this game takes nigh on 15 minutes! So bugs apart, the game plays like any other Infocom disc based game, with most of the commands present, especially things like TAKE ALL and GET IT and more to the point the "already carrying" command. You know the one, when you have the sword for instance, entering "fight Troll" gets you (with sword) on the screen, so invaluable for saving the wear on the

fingers. There is no doubt that the ZORK series is a classic for any adventurer to have in the collection, and now the great caverns of the Underground Empire are not exclusively for disc owners only and that has to be a good thing. All I will say is that you test the copy you buy thoroughly before you leave the shop.

PERSONAL RATING 8

WAR IN MIDDLE EARTH
Melbourne House £9.99

A lot has been said of the 16 bit version of this game and there is no doubt that the Amiga can present us with some magical graphical sequences with digitised sound effects and alike. Translating this onto 8 bit and you get a problem. What bits do you leave in and what bits do you take out? The best of both worlds is what we would want, a great strategy adventure the way Tolkein envisaged, brought to life using the best that the 64 can muster. In reality I found the game a huge disappointment on the 64, as what started off as a massive battle between good and evil is somewhat firing blanks on only three cylinders.

Melbourne House have long been associated with Tolkein ever since the now famous HOBBIT game way back when. Philip Mitchell who devised that great adventure system never managed to better it, and is now working in Industry on business mainframes. That left Melbourne House with a legacy of bringing Tolkeins story to life and promising more but not delivering. We all waited for Lord Of The Rings proper to happen but to no avail, instead War In Middle Earth tries to tie up the whole trilogy in one bash by centering on the story from the time the party sets out from Rivendell on its journey to the Cracks of Doom. The game is played out on three levels. Full Map, Campaign and Battle, and a pointing finger is used in conjunction with icons to transfer between the different levels. The Full Map level offers an overview of the whole of Middle Earth, and the differing forces are shown as varying coloured shapes. On Campaign level, you zoom in on a portion of the land and review the different armies and give out your orders as to their direction or mode. Battle stage is a sort of half hearted animated effort of your trusty army doing their thing to Saurons forces of evil.

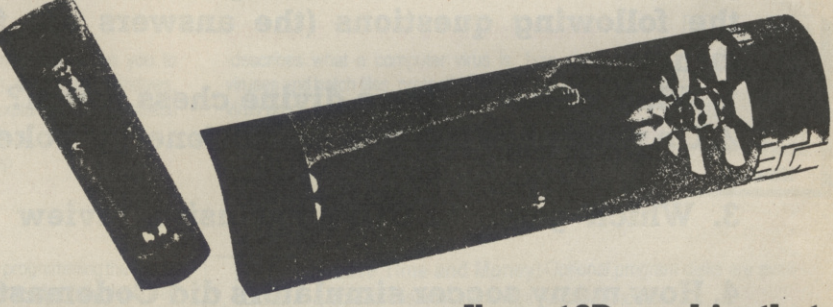
All the names are there, Gandalf, Frodo, Sauron, the Nazguls, Gollum and Orcs and Trolls, and anyone who loves the stories of Tolkein will want to get this game, it's just I feel instead of bringing out a token version for 8 bits, the company should have taken a look at completely changing the style to fit.

PERSONAL RATING 8

SPACE QUEST II
AMIGA SIERRA £24.95

Sierra are getting very bullish this year, and though Activision intend to really become a major software force in the UK. They made their name with the KINGS QUEST series of graphical animated adventures, and have since progressed to Space Quest, Police Quest and the famous Leisure Suit Larry. Space Quest II promises us better graphics and sound and depth of play so far not seen in the "Quest series". I have to say, that I enjoyed it immensely, mainly for the humour that flows throughout the game, even if you get killed off, you manage to chuckle at the way it happens, which for us adventurers is something of a rarity.

The story concerns you back on your ship as chief Sanitation Engineer after your heroics in Space Quest I and opens with you sweeping the decks. You get a call from the captain to get back and clean out a recently arrived ship. That's when your troubles start, as you come face to face with fat Vohaul, whose sinister plot this time is to invade earth with pushy, obnoxious genetically engineered insurance salesmen!!



You get 3D graphics that you can move in front of or behind or around, multiple solutions full sentence input, and best of all slick hard hitting American wit.

Great fun, well worth getting.

PERSONAL RATING. 8

THATS IT FOR ANOTHER MONTH, NEXT ISSUE I WILL HAVE AN EXCLUSIVE INTERVIEW WITH THE PRESIDENT OF SIERRA ROBERTA WILLIAMS, TILL THEN HAPPY HUNTING

Want to be an Oskar Winner?

In the March issue of AUI, the CCI Oskars took the stage. Soon after that bumper issue hit the streets,the CCI readers took to their word processors. Some of you were ecstatic. The thank you notes threatened to cover the floor. Others, though, were less complimentary. They threatened to cover the 'Thank You's'. 'How could you!?!' your letters screamed. And 'My little brother could play THAT one standing on his head with his hands tied behind his back!' Well, CCI takes no responsibilty for what you do to your little brother. What we do want to do is to give one lucky CCI reader the chance to win all of those amazing, award winning games that have earned themselves Oskar distinction. Yes, every single one will go to the Oskar competition prize winner. And he or she will get a personal Oskar, too, in need of polish! All you have to do is to answer the following questions (the answers are found in this month's issue):

1. What 'game' is like a divine chess match?

2. On what page can you find an 'energy' poke in this month's issue?

3. Which game is CCI's exclusive review of an Amiga import?

4. How many soccer simulators did Codemasters decide to include?

5. On what page will you find the quote,'The loading sequence is pretty neat with good graphics, sound and digitised speech.'

Send your answers on a postcard to:
CCI OSKAR COMPETITION
c/o Croftward Publishing
40 Bowling Green Lane
London EC1R ONE
All entries must be received by July 15. The winner will be selected from among the thousands of entries at random.

One Good Book deserves another and another, and another, and a...

New

Amiga C for Advanced Programmers

-contains a wealth of information from the pros: how compilers, assemblers and linkers work, designing and programming user friendly interfaces using Intuition, combining assembly language and C codes, and more. Includes complete source code for text editor.

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PC Week 11•21•88

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Revenge of the Virus

Part II

Last month, Nancy Picard investigated common Amiga and MS-DOS viruses and how you could deterimine if your computer disks were infected. In Part II, she explains how to 'cure' an infected machine and possibly prevent future infection from occurring.

Discovering that a virus has infected your machine and your software is a little like going to buy some popcorn during a feature film, and returning to find that someone has spilled Pepsi on your seat. Not only is it extremely unpleasant — you also feel somewhat 'attacked'. Out there is an 'aggressor', anonymous in the crowd.

With a virus, there is the same nameless aggression, the same powerlessness. You obviously cannot track down the virus writer and stomp all over his (or her) mouse any more than you can find the phantom Pepsi spiller. If we were to create a profile of a virus writer on the Amiga, we would expect to encounter a very intelligent programmer with a prankish side. Robert Morris, the son of the chief computer scientist at the National Computer Security Centre, was responsible for a virus that crashed 6,000 workstations on the US research Unix network internet. Some kind of rebellious youth, eh?

Amiga viruses appear to be more annoying than vindictive. However, the virus writers in the MS-DOS environment have been more purposefully directed. Because MS-DOS machines are used in greater numbers and responsible for the transferral of huge amounts of information across modems and mainframes, the damage a single virus can do is immense.

One tip is to be especially aware of provocative dates — Friday the 13th, April 1st, ans so on. Viruses can remain resident in memory and attact on specific dates. A recent publicity blitz helped prevention this year.

For large institutions, eradicting viruses from hard disks and software can take hundreds of hours and cost large amounts of money. Most reports indicate that although many universities and large companies have computer security policies, very few other than those that have been infected have installed virus protection schemes.

Warwick University, London's City University, and British Rail are some of the organisations that have been infected. For a company to publicize that it has been 'virused' is potentially damaging in more than one way: it also shows that the data security is faulty. Many experts discourage the publicising of code and viruses for fear of providing information to potential virus writers.

At present, security procedures appear to be easily infiltrated (see this month's news). In the UK, the Serious Fraud Office considers any type of infiltration to be classified as 'computer crime'. The Computer Services Association recently issued new guidelines on computer security — which now include the threat of viruses.

Network Shutdown

What did British Rail do when it was infected? As soon as the technical team noticed that something strange was going on, they shut down the network at the particular site (Derby) and put a ban on the transfer of .EXE files. The prohibition was reported to stretch to 550 local area networks and 10,000 PC workstations. The data files were not damaged, but the .EXE files had to be replaced with original copies from Master disks, while all floppies and data cartridges were investigated. Now BR has its own virus checking program and examines all floppies and data cartridges. In its final analysis, BR determined that the infector was a disk from an outside company, and the virus was which hidden in ARC.EXE and UNARC.EXE files. No other location sites were affected. Most companies seem to fear the unintentional loss or damage of information, even sabotage, more than viruses. One US based company appears to have solved several problems at once. Knowledge Network Systems restricts users to their personal workstations using Oasis, a network management system for Novell Lans. The applications are available in a distributed environment as needed according to the job task and level of security clearance of each user. Sotware cannont be installed except by high level network managers, the reason for which is that if a user writes to a directory containing software (such as dBase), applications can be corrupted. In addition, Oasis also uses Opal, a Lan-specific procedural language for developing applications, which removes the need for batch files and so adds even more prevention.

With the proliferation of products, books, articles, workshops and even associations concerning virus threats, the virus reporters and investigators are attaining as much notoriety as the virus creators themselves. There is publishedbickering among Jim Bates, David Drury, Joe Hirst and Dr Alan Soloman, well-known UK virus fighters with obviously different agendas.

Because he is involved with a data retrieval company that has been asked to handle virus cases, Soloman often faces criticism for publicizing virus information; viruses are good business. However, he is just one example of a growing commercial industry centered around virus threats. The Amiga has several PD programs available to check for and eradicate various viruses. VirusX, VCheck, and the Guardian are all available on Fred Fish disks, disk-based magazines, and PD libraries (check your local groups for more information). While these antidotes effectively deal with standard boot blocks, often the advice to someone with a copy-protected, custom boot block commercial program is...'Get another one, Mac.'

continued on page 84

Save space, save your Amiga!

The Precision Amiga 500 Control Centre is what you and your Amiga has been waiting for. You slip the A500 into the lower area and place your monitor on top, and you have a unit that is as firm as an A2000.

The Control Centre is strong and well-constructed from special lightweight metal. It is beautifully designed for maximum space saving with the minimum of fuss. Its features include:

- ★ A large front shelf for disk drives and peripherals
- ★ Joystick ports on the outside for easy access
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The Control Centre has a R.R.P. of £49.95, but you can get one exclusively from AUI at the special price of £44.95 (+£2.50 p & p). Why pay more?!? Simply fill out the coupon and we will rush you your personal A500 Control Centre. ***Save space and save your Amiga from harm!***

To: **Commodore Computing International**
40 Bowling Green Lane, London EC1R 0NE

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Name..

Address..

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Please allow 28 days for delivery

C9052

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Discovery Software has attempted to fill this small niche with Virus Infection Protection (V.I.P.), which retails for approximately $49.95 (US). V.I.P. is a preventative program, allowing the user to archive both standard and non-standard bootblocks of even copy protected programs. It can check for several well known viruses, thanks to some added programming efforts by Steve Tibbet himself, and also has a virus database to which you may add any new strains you discover later. The idea is to copy your boot block before anything happens, and then to write it back to your disk should a virus attack.

Other noteworthy developments have occurred in the insurance field. Lloyds has introduced The Lloyds Systems Perils Policy, which gives some protection to companies afflicted by a virus, and also covers other data destruction problems.

Yet even though the knowledge that the commercial world will support you and your computer is somewhat comforting, it is rather like learning that the person who spilled Pepsi in your seat was your date.

AMIGA Cures

Boot Block viruses can only live on the boot track of your disk and cannot infect an ordinary data or program disk. Because Workbench contains boot track code which is read and executed as part of the system start up, the SCA, for example, replaces the normal start-up code and takes over certain system vectors. Every time you warm boot another disk, the virus checks to see if the new Workbench in the same as the old one — if not it simply copies itself onto the new disk. Every 16 times self-copied, it prints the now infamous message, 'Something wonderful has happened..' etc.

To see if you have the SCA virus, just perform the normal CNTRL-CBM-AMIGA reboot and then hold down the left mouse button while the system restarts. The SCA actually checks for this, and then disconnects itself from the system. You will see the screen flash GREEN for a moment before the normal Workbench requester display.

You can also use a sector editor program to read the boot block yourself. Read in track 0 head 0 sector 0, look in the ASCII window, and you may see soemthing like: DOS 5 CHW!! Or you can look in track 0, sector 2, head 0 and see the message.

Byte Bandit

Using a sector editor is the only way to see if you have the Byte Bandit, which shuts down your machine at any time. Read in track 0, head 0, sector 0 to see:

```
DOS 7     hp     VIRUS by the BYTE BANDIT...
```

The cure for both viruses is straightforward and simple, but it only works if you have two drives. If you have a standard boot block, boot with a clean standard Workbench, put the infected disk in the second drive, enter the Command Language Interface (CLI) and type:

```
INSTALL DF1:
```

This will restore the standard boot block and thus kill the virus. If you only have one disk drive, this obviously will not work as you will always have to insert the infected disk first. You will have to resort to a public domain or a commercial program.

MS-DOS Cures

The cures for both the Amiga and MS-DOS machines are limited, and most experts advise against non-experts fiddling around with their machines. Virus writers are obviously very good programmers, and detection and elimination can be tricky. Boot sector viruses, for example, intercept systems requests for a boot sector read and re-route them to a copy of the original boot sector stored elsewhere on the disk. Locations and layouts of boot sectors are also variables.

Among the various virus checking schemes, there are those that check for the existence of viruses within the permanent storage media, and those that detect the point at which the virus is linked into the DOS. Some anti-viral programs, such as Checkvirus, maintain check on the files after taking a copy or fingerprint of the file itself. Thus any virus that changes, for example, the size of a file would be noticed. It would not notice boot sector viruses.

Checking for boot sector viruses is more complex and prone to misinterpretation. Virtually the only way to ensure that you have a clean disk is to check to see if the normal boot routine is preceded by the virus boot, which will modify one or more of the system interrupt tables. Similar to what V.I.P. does for the Amiga, you must be able to save a permanent copy of the table for future comparison and verification.

If you are keen to try to see if you do have a virus, however, there are some ways that the fairly literate computer user has at his or her disposal. To check for the Italian virus on your disk — use CHDISK. If you find 1K of bad sectors on the disk, then you have been infected (the only other way 1K will appear is if you have done so yourself. For example,the command FORMAT will mark a minimum of 5K on bad sectors). For a hard disk, the issue of bad sectors is more difficult. As a rule, 2K of bad sectors probably means you are infected. Take a minute to boot from the hard disk and then to insert a floppy and use CHDISK to see if you have been infected. To eradicate the virus from all of your software, boot from a clean disk and reformat every disk. If the data on the disk is needed, then copy *.* can be used to tranfser if to a clean disk first.

In addition, a reader wrote to PC Week recently with this tip: the Italian virus will immediately crash if a computer with a 80286 or 80386 processor is booted with an infected disk. Be forwarned.

With MS-DOS file viruses, you must simply delete the infected file and replace it with a clean copy. All file viruses live in files signified buy .COM, .SYS and .EXE (note: .COM viruses appear more frequently, possibly because they are easier to write). You will notice you have been infected if your computer slows down - usually viruses make files grow so large that they take up space and eventually cannot load. With large drives, however, and even larger ones expected, the cleaning up procedure is not adviseable for mid-to large size companies.

Conclusion

The several examples previously outlined give only a small sample of possible virus checks and cures. Presently, it is impossible to promote anything but prevention, as viruses appear to be with us for the present — and likely to proliferate.

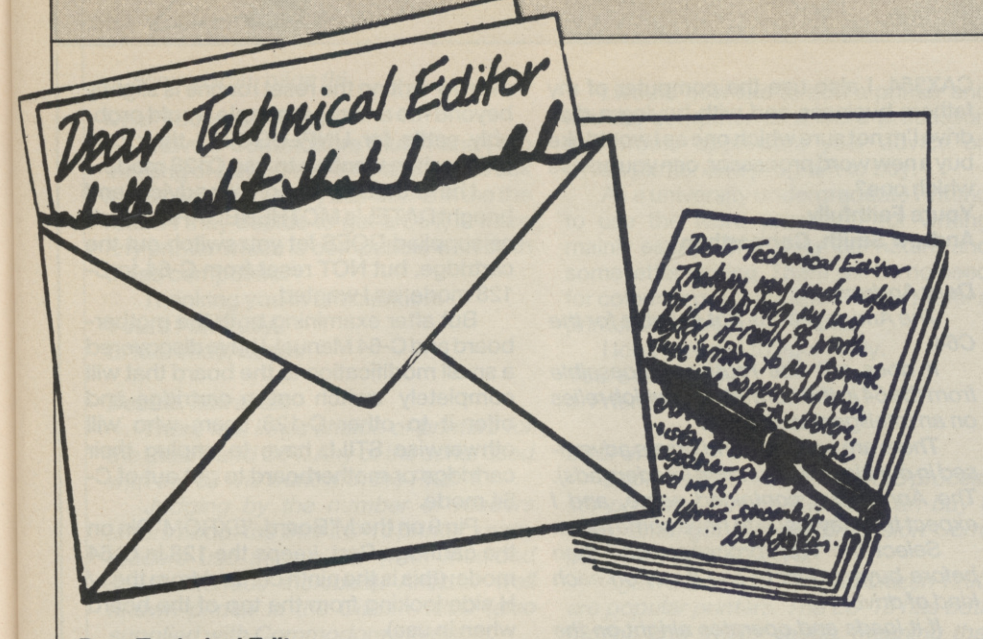
And if that were not enough — it gets worse. Although I reviewed different types of viruses last month, do not assume that because what you have on your screen looks like a recognizable variety, it is. A clever virus writer can write a program to appear to do what a well-known virus does, and then affect your machine in other ways.

Corporations and other institutions are trying to make computer security practices part of the 'everyday culture' of the office place. Until virus detection and eradication software reaches a stage in which it prevents any disk infiltration, including flashing warnings to the unsuspecting user, viruses remain a substantial threat. There is no cause for alarm, but there is a need to be aware.

So the next time you go to the movies, perhaps to see your favourite creature double feature or hack-em/slash-em epic, if you do decide to get up from your seat — look before you sit down again. Unpleasant surprises may not be avoidable. Whether or not your date actually wanted to be rid of you is, of course, another matter altogether.

N.P.

The Guide to Virus Protection will be published in the June issue of CCI.



Dear Technical Editor,

I am a proud owner of a CBM +4 and after reading a letter from Steven Bell (issue March '89) about getting the Plus 4 to talk. I also would like to make the Plus 4 talk. So could you send me a small program which makes the machine say hello and I after that I could experiment more.

In the program could you explain each line.

Also have you any useful pokes I could have.

Thankyou,

Philip Saunders, Surrey

P.S. Do you know of Commodore's address?

Dear Philip,

I refer Philip to the letter from Stephen Sayers.

Commodore's address is CBM, Commodore House, The Switchback, Gardner Road, Maidenhead, Berks SL6 7XA (phone 0628-770088)

If readers send in their useful pokes for the Plus/4 then I will check them and print a list for other readers.

Dear Technical Editor,

Please help me, I'm desperate. While wondering what I should ask for for Christmas, I saw an ad in your magazine.

"Reset Cartridge - Add pokes from magazines - £5.99"

I thought of all the uncompleted games I own and I thought it would be ideal.

Amongst other things, I was given the cartridge for Christmas. The problem is I don't know how to use it. I've tried everything but to no avail. I now turn to you in desperation.

Thank you for any help,

B.L.

P.S. Are there any systems for finding out pokes or do you have to be a computer genius.

Dear B.L.,

The way to do it is to run the game then press reset to suspend the game and break into the monitor provided in the cartridge.

Type X to return to basic.

Type the appropriate POKE(S) in direct mode then use the cartridge option to continue the game.

This type of cartridge normally has an OPTION menu with choices such as CONTINUE BASIC RESET BACKUP DISK RESET ALL BACKUP TAPE HARDCOPY MONITOR

(These being examples from the Power Cartridge by KCS)

Choose from the menu with F7 and F1 to alter the choice and press RETURN to accept the choice.

If you are used to using a machine code monitor then select the area of memory required and type in the appropriate HEX code and press RETURN to accept.

The HEX code will be the equivalent of the value POKED in from Basic but converted to HEX first.

When you poke from Basic this value is converted by the system and converted to HEX in the MONITOR.

You do not have to be a computer genius to work out your own pokes. But you do need a good HUNT/FIND utility such as that supplied with the Power Cartridge (and others).

Usually one of the POWERMON/ SUPERMON type.

Using this type in the monitor after pausing the game, it is possible to search for a specified byte such as $OA where the normal maximum number of lives is 10 (the decimal equivalent of $OA), and change it to the HEX equivalent of the number of lives you want to have.

Alternatively, if you have more knowledge of machine code, then search for the routine which accumulates the lives used until the accumulator is greater than the number of lives allowed.

Then remove the test routine so that you have an indefinite number of lives.

Dear Technical Editor,

I have only been a reader of your magazine since December 1987, but in that time, I have found it to be very informative and helpful. Keep up the good work.

Secondly, earlier this year, I purchased by mail order, one of the new Commodore 1581 disk drives. The main reason for the purchase was for the large files which I keep, would no longer fit on a 5 1/4" disk.

I own a 128D, and maintain these files with the use of DBase II.

The reason for my letter, is that in CP/M, I am unable to convince the computer to talk to the 1581. All I get is the error message 'BDOS Function 14 - Disk I/O'. The only format programme I have on CP/M is the one on the system/utilities disk which came with the computer, and this will only allow me to format a disk in drive A. Further more, the system disk does not include the FORMAT.HLP facility.

I first read about the 1581 in the January '88 issue of CCI, and the writer of the article indicated that he had no trouble in using it in CP/M mode, but also indicated that in order to make full use of the 1581's disk space, it would be necessary to change a few bytes of the CP/M file. In order to do this I went through the expense of purchasing the CP/M manual, and further source and utilities disks from Commodore in Australia, but these did not help, mainly I suppose as the 1581 was not released when the book was published.

I am at my wits end, having tried all sorts of modifications to the system file, and other files on the source disks which go to make a system file once compiled.

I will note here that I have had no trouble operating the 1581 from either 64 or 128 basic, and is exceptionally fast with Superscript, with which I wrote this letter.

I hope you can help me, because at the moment, the 1581 has become a big white elephant, well more like a small one, but even so it is just about useless to me unless it can be used in CP/M.

Thank you in anticipation,

Steve McKinley, Australia

Dear Steve,

There is a version of CP/M which is being shipped with the new 128 computers from Germany which corrects this bug.

Unfortunately Commodore will not release the corrected version to dealers for release. (This release was, believe it or not, dated 5/5/87).

There is nothing much you can do about the old version of CP/M for the 128. it has several bugs.

Perhaps a flood of letters to Commodore at Maidenhead may help. This delay is due to Commodore Europe and not Commodore USA.

Dear Technical Editor,

I wonder if you can help me, I am looking for a Program to assist me with

cont. on next page

continued from page 85

titling, you see I am a Video movie maker and need some sort of Graphic or Art program.

I have a C64. Everywhere I go they give me a blank look as though I was from another planet. The only softwaer readily available seems to be 'zip','zap','crash-','bang','wallop','zonk', badly instructed so called games. Please help.

Yours sincerely,
Carl Stredder, Lancashire

Dear Carl,

There is a package called Video Title Shop for the 64 available from Financial Systems Software priced at $19.95 so tell your local dealers to keep up to date by contacting advertisers in CCI and getting the latest lists of software.

Dear Technical Editor,

As a user of the excellent Stack interfaces for a number of years I would offer the following advice to LEWIS M BEADLE (JAN CCI) and S D CARTER (MAR CCI).

The interface must be set to "Printer original" mode BEFORE loading the Graphics program, this can be achieved by something like OPEN 4,4,1:PRINT#4:CLOSE 4 (RETURN), it must then be "Locked" into that mode with OPEN 4,4,3:PRINT#4:CLOSE4.

I have overcome the DEVICE NOT PRESENT problem on my C16/STACK/EPSON setup by changing the above slightly to the following

a/ OPEN 4,4,1 (RETURN)

b/ PRINT#4 (RETURN) probably produces device not present error to repeat until "ready" appears.

c/ CLOSE4 (RETURN)

d/ OPEN 4,4,3:PRINT#4:CLOSE4

e/ LOAD YOUR PROGRAM.

It should be noted that the 8K Buffered version 92008/G is not compatible with some graphics software (such as GEOS) and the unbuffered 92000/G must be used.

Yours Faithfully,
M.J. Last, Suffolk

Dear M.J. Last,

This will help some readers with printer and/or interface problems. Readers practical experiences and problems may help other readers to overcome their own difficulties, so please write in with your tips etc.

Dear Technical Editor,

Recently I have been considering buying a disk drive. I've been looking through many computer magazines, really they've just confused me! I have a Commodore 64, and a Citizen printer.

I was wondering whether the second Amiga drive could be used with the C64.

I also would like to know if you have any addresses for second hand drives? Could you tell me also, which is the best drive to buy a 1541 or 1541C or a Cumana CAX354. I also use the computer of my fathers business and with buying a disk drive I'm not sure which one as I would like buy a new word processor, can you advise which one?

Yours Faithfully,
Andrew Smith, Carmarthen

Dear Andrew,

The Amiga drive is not suitable for the C64.

It does not use routines accessible from the 64 in the normal way, which relies on an intelligent disk drive.

There are second hand drives advertised in our classified section (readers ads). The April issue contained some, and I expect the May issue to have some more.

Select the Wordprocessor and then before buying, ask to see it run on each kind of drive.

If it loads and operates alright on the fast drive, then buy that one in preference to the slower and more expensive 1541C. It really depends on your access to a suitable computer showroom or perhaps if you have a local computer club.

Dear Technical Editor,

I own a CBM64 and have just bought an Amiga. The PAL version of the CBM64 has 312 raster lines as far as I can work out, but I need to know how many raster lines other versions of the CBM64 (and Amiga) have i.e NTSC (is there a SECAM version?)

Could you tell me how many lines the CBM64 and Amiga have on various formats?

Yours hopefully,
Steven Hanver, Sussex

Dear Steven,

The UK PAL system and most of Western Europe operates at 50 cycles and the raster lines on the 64 amount to 312. The NTSC system, as used in the USA has 262 raster lines per frame.

However the 64 displays only lines 51 to 251 (ie 200 lines).

Lines 1-50 and 252 upwards are not visible. The above info also applies to the Amiga.

There are four basic display modes for the Amiga, and they are

Interlace 400 screen lines for sharper vertical resolution.

Non-interlace 200 lines (raster sweeps)

Low-res 320 pixels width of screen

Hi-res 640 pixels width of screen

For the 64 we have

Low-res 25 lines (of 40 characters per line)

Hi-res 200 lines x 320 bitmapped graphics

Dear Technical Editor,

Thank you for your reply to my problem of RESET-ing the C-128 in '128' mode without removing the Act.Replay Cartridge, though creating an EPROM, or even re-writing the reset routine is slightly beyond me and most people would probably settle for UNPLUGGING their cartridge when wanting to use C128 mode.

I have though, taken your advice, and bought DATEL'S MOTHERBOARD, which as supplied DOES let you switch out the cartridge, but NOT reset from C-64 to C-128 mode, as I wanted.

But after examining both the motherboard and C-64 Manual, I have discovered a small modification to the board that will completely 'switch out' a cartridge and offer it to other C-128 users who will othwerwise STILL have to unplug their cartridge or motherboard to get out of C-64 mode.

Pin 9 on the M'Board, 'EXROM' Pin on the cartridge Port, keeps the 128 in C-64 mode; (this is the ninth contact from the L/H side looking from the top of the board when in use).

I have cut across the track from Pin 9, and added a small slide switch to the board across this break. (On the datel Board, track nine goes beneath the board for a short distance, where any wires are out of harms way).

The switch can be mounted easily BESIDE the reset button, though I removed this button to have a ready made hole for the switch. Making track 9 'switchable' now means that with this switch closed, turning on the C-128 will power up in C64 mode and the board/cartridge operate as normal, but if the switch is OPEN you power up in 128 mode, in either case turning the computer off before using the switch, of course.

I know this modification isn't found in any manual!!, but it is (comparatively) simple, WORKS, and is perhaps the simplest way of using the 128 in 128 mode, (other than unplugging a C64 cartridge each time of course)!!??...

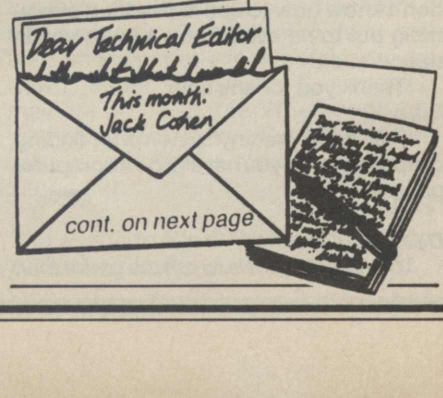
Your comments are welcome anyway........

Yours,
Mike Vine, Essex

Dear Mike,

Mike has adapted a DATEL Motherboard so that he can power up in 128 mode even though the 64 cartridges are fitted on the board.

This makes cartridges easier to use by preventing damage to contacts caused by constant insertion and removal of cartridges.



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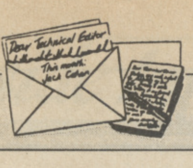

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Dear Technical Editor,

I have a Commodore Plus/4 and I am thinking of buying a printer and would ask if you can give me any advice. As in the the future I may decide to get a C64, is there any printer which is compatible with both these computers.

Thanking you in anticipation.

Yours Faithfully,
E. Marshall, Leeds

Dear E. Marshall,

There is a large choice of printers for the Plus/4 and C64. Any of the serial used with the 64 will work with the Plus/4.

Judging by the number of readers letters about the Star LC-10 printer, many readers use this printer (with moulded serial interface included). Another well known printer is the Citizen 120D (also supplied with Commodore interface).

There are many others shown on our advertisers pages. If you choose a printer without a built in CBM interface then a suitable interface will be an extra and then it will be best to use the serial port for compatibility with Plus/4 and the 64.

Dear Technical Editor,

I have used a '64 with success for a number of years and my equipment includes a Modem for connection to Prestel, a 'Final Cartridge' and a 1541 Disc Drive.

I would now like to add a printer and use the computer as a word processor, and would appreciate your advice on which printer and program to buy.

As a university undergraduate I intend to use the word processor for writing mainly essays of a historical nature and some letter writing. There will be no need for colour or graphics and I would prefer a printer able to use A4 paper.

I look forward to your reply.

Yours faithfully,
J. Friend, Cheshire

Dear J. Friend,

Superscript 64 is a good word processor program for the 64. You can buy it from, amongst others, Dimension Computers on 0533-517479.

Again the Star LC-10 and Citizen 120D are popular printers. The LC-10 has both friction and tractor feeds, meaning that you can use single sheet feed of A4 size.

The Citizen is much cheaper, and since you do not need the extras offered with the LC-10 (6 resident fonts, 6 print pitches and other refinements), it may be better for your needs.

Dear Technical Editor,

I am writing to ask advice on a problem I have in getting the last part of 'Blackjack' as issued in the CCI to work.

I found that in typing in BJ.dat.1, any mistakes were automatically shown on the screen, but with BJ.dat.2 the line 1000-1070 appear with 'ok' after them but then the program stops with the line ?Illegal Quantity Error In Line 40.

I have treble checked the listing for any mistakes in typing and am unable to find anything wrong.

I would be very grateful if you could sort this problem for me.

I remain,

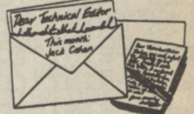
Yours Faithfully,
M. Last, Wirral

Dear M. Last,

I have checked 'Blackjack' up to line 1080 and the error message that you find does not appear.

I conclude that there is an error in your copying of the DATA in line 1080. it seems almost certain that you have entered a letter 'O' instead of the figure '0'.

To check this, run the program and when it crashes say 0F with OF or 07 then D will be 399. The program crashes because this exceeds 255, which is the largest number that can be poked into one memory location, and this produces the error message.



Thunderblade Comp. Winners

WINNER:

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Worthing

RUNNERS UP:

S. Mooney
Glasgow

R.H. Underwood
Surrey

Timothy Boucher
Staffs

SGT K.J. Brockman
BFPO 23

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Wilts

Daniel Parkington
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Dorset

Mr. J. Day
Cambs

Jim Ellison
Tyne and Wear

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Germany

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Alun Battenbough
Swansea

Francis Hill
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Colchester

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London

Ice Hockey Part II

Christopher Doig

The second part of Christopher Doig's management style ice hockey program for the +4, continued from last month.

```
595 PRINT"[CD][CR8]MATCHES :"MA
600 PRINT"[CD][CR8]TEAM MORALE :";:TM=INT(RND(1)*10):PRINTINT(TM*9.7)"[CL]%"
605 GOTO470
610 PRINT"[HOM][CD4]":FORT=1TO12:PRINT"[CR6][SP28]":NEXTT
615 PRINT"[HOM][CD5][CR13]FINANTIAL SIDE"
620 PRINT"[CR12]↳˺˺˺˺˺˺˺˺˺˺˺˺˺˺˺˺ˊ"
625 PRINT"[CD][CR7]THE RINKS OVERHEADS AMOUNTS"
630 PRINT"[CD][CR7]TO A GRAND TOTAL OF £847."
635 PRINT"[CD][CR7]WHICH WILL BE REDUCED FROM"
640 PRINT"[CD][CR7]YOUR PRESENT ACCOUNT."
645 PRINT"[CD][CR7][SP7]INCOME : ";:IN=INT(RND(1)*2000)+100:PRINTIN:ACC=(ACC-847
)+IN
650 PRINT"[CU][CR23]£"
655 IFPEEK(198)=60THENGOSUB345:ELSE655
660 PRINT"[HOM][CD4]":FORT=1TO12:PRINT"[CR6][SP28]":NEXTT
665 PRINT"[ORNG][HOM][CD6][CR7]L\L\L\L\L\L\L\L\L\L\L\L\L\"
670 PRINT"[CYN][CR7]/T/T/T/T/T/T/T/T/T/T/T/T"
675 PRINT"[ORNG][CR7]\L\L\L\L\L\L\L\L\L\L\L\L\L"
680 PRINT"[CYN][CR7]Γ/T/T/T/T/T/T/T/T/T/T/T/T/"
685 PRINT"[RED][CR7]────────────────────────────"
690 PRINT"[BLU][CD][CR7]"P$"[MGRY][SP2]VERSES[SP2][LGRN]"B$
695 FORN=1TO3
700 PRINT"[CD3][CR13]AFTER PERIOD"AP
705 PRINT"[CU3][CR8]";:P=INT(RND(1)*(TM/2)):PRINTP:TP=TP+P
710 PRINT"[CU][CR27]";:B=INT(RND(1)*(7/2)):PRINTB"[CU2]":TB=TB+B
715 FORT=1TO500:NEXTT:AP=AP+1:NEXTN
720 PRINT"[CD3][CR13][SP4]TOTALS[SP4]"
725 PRINT"[CU3][CR8]"TP
730 PRINT"[CU][CR27]"TB
735 IFPEEK(198)=60THEN740:ELSE735
740 FORT=1TOTEAM
745 IFT=VTHENP(T)=P(T)+TB
750 IFT=ZTHENP(T)=P(T)+TP
755 IFT<>ZANDT<>VTHENP(T)=P(T)+INT(RND(1)*9)
760 NEXTT:TP=0:TB=0:AP=1:MA=MA+1:SCBRD=SCBRD+10
765 IFMA=20THEN775
770 GOTO425
```

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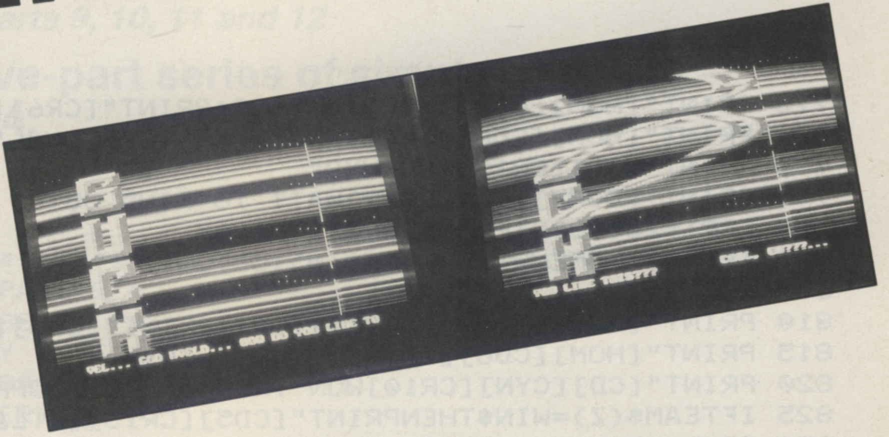
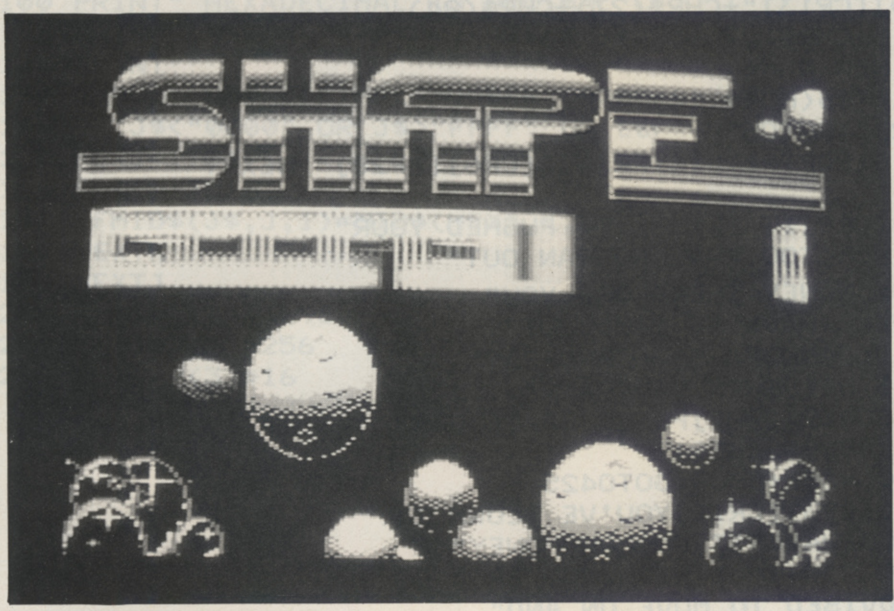
DEMO ZONE

Robert Troughton, one of our regular program contributors, wrote to us recently concerning demo disks for the C64.

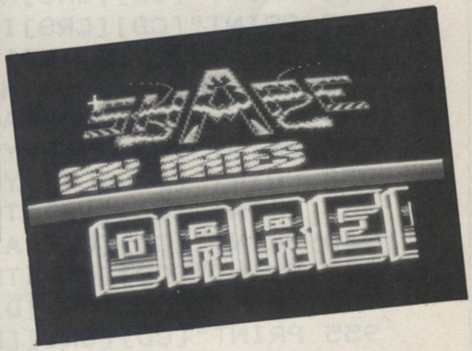


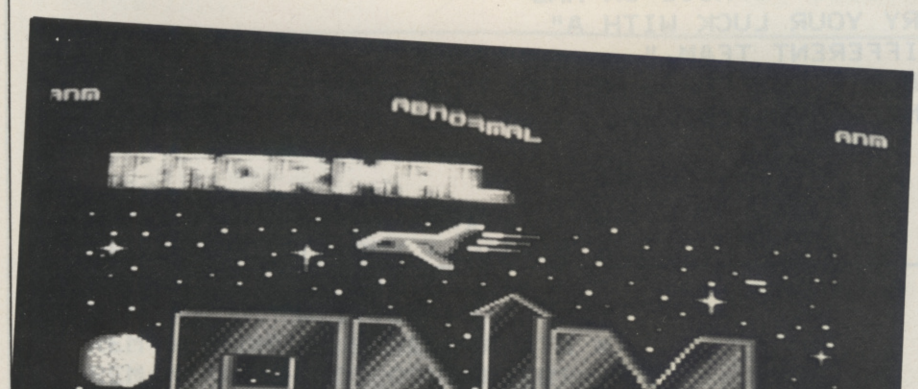
"Peter Gerrard touched on Raster Interrupts some time ago, explaining the rudimentaries and such-like. Raster Interrupts are very handy in games, but in demos they are essential!!! If you have ever seen any demos from Compunet, then you may have marvelled at the wondrous effects created through raster-interrupts … though Compunet seems to have more graphical demos than technical.



Most people seem to think that demos end with Compunet … this is far from true! I work for a demo-group called Pyrotech, who use compunet, but rarely upload demos. Compunet is (at present) purely a British creation, and foreigners are unable to use it. Yet some of the best demo-coders are living in Sweden, Norway, Germany and other far-away places. Most are within the EEC … this is because sending 1 disk in loose packaging costs no more to countries in the EEC than to anywhere in Britain! All you really need to do is find somebody who is willing to swap demos with you!" Robert Troughton may be that person. As you can see from the examples here, he has an exciting array of demos available for a small fee, between £1.25 and £2.

Contact: R. Troughton, 42 Browfield Terrace, Silsden, Keighley, West Yorkshire, BD20 9PT.





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```
775 PRINT"[HOM][CD4]":FORT=1TO12:PRINT"[CR6][SP28]":NEXTT
780 PRINT"[HOM][CD8][CR11]WHO WON THE ANNUAL"
785 PRINT"[CD][CR16]TROPHY?"
790 PRINT"[DGRY][CD][CR12]WAIT TO FIND OUT"
795 FORT=200TO0STEP-1:FORN=1TOTEAM
800 IFP(N)=TTHENWIN$=TEAM$(N):GOTO810
805 NEXTN,T
810 PRINT"[HOM][CD4]":FORT=1TO12:PRINT"[CR6][SP28]":NEXTT
815 PRINT"[HOM][CD6][CR12][CTL8]"WIN$
820 PRINT"[CD][CYN][CR10]WON THE ANNUAL TROPHY"
825 IFTEAM$(Z)=WIN$THENPRINT"[CD5][CR15][CTL8]YOUR TEAM!"
830 FORT=1TO5000:NEXTT
835 FORY=1TOTEAM:P(Y)=0:NEXTY
840 PRINT"[HOM][CD2]":FORT=1TO14:PRINT"[CR6][SP28]":NEXTT:GOTO190
845 PRINT"[HOM][CD20][CR13]"+CHR$(27)+CHR$(84)
850 PRINT"[CD][CR24]"+CHR$(27)+CHR$(66)
855 PRINT"ENTER THE NEW NAME:"
860 INPUTMGR$:MGR$=LEFT$(MGR$,14)
865 PRINT"[CD3][HOM2]":GOTO555
870 PRINT"[HOM][CD2]":FORT=1TO14:PRINT"[CR6][SP28]":NEXTT
875 IFLOAN=1THEN925
880 PRINT"[HOM][CD3][CR8]IT SEEMS YOU PUSHED YOUR"
885 PRINT"[CD][CR8]LUCK TOO FAR AND RAN OUT"
890 PRINT"[CD][CR8]OF MONEY.THEREFORE YOU"
895 PRINT"[CD][CR8]WILL HAVE TO TAKE OUT"
900 PRINT"[CD][CR8]A LOAN OF £5000 AND PAY"
905 PRINT"[CD][CR8]IT OFF WHEN YOU CAN."
910 PRINT"[CTL8][CD][CR12][WHT]PRESS SPACE BAR"
915 IFPEEK(198)=60THEN920:ELSE915
920 LOAN=1:LN=5000:ACC=ACC+5000:GOTO425
925 PRINT"[HOM][DGRY][CD3][CR12]YOU'VE BLOWN IT!"
930 PRINT"[CD][CR7]YOU HAVEN'T ENOUGH MONEY"
935 PRINT"[CD][CR7]TO CONTINUE WITH.YOU ARE"
940 PRINT"[CD][CR7]ADVISED TO MOVE ON AND"
945 PRINT"[CD][CR7]TRY YOUR LUCK WITH A"
950 PRINT"[CD][CR7]DIFFERENT TEAM."
955 PRINT"[CD][CR8][BLU][CTL8]PRESS RETURN TO RESTART"
960 IFPEEK(198)=1THENCLR:RUN:ELSE960
```

Utility Box

Madhu Surendranath - Parts 9, 10, 11 and 12

The last in the twelve-part series of simple scrolling messages for the 64.

```
10 REM ************************
20 REM * UTILITY BOX - PART 9 *
30 REM *    (C) SEPT '88      *
40 REM *      WRITTEN BY      *
50 REM * MADHU  SURENDRANATH *
60 REM * 'HEX-DEC  CONVERTER' *
70 REM ************************
80 HEX$="0123456789ABCDEF"
90 PRINT" *************************
100 PRINT" HEXADECIMAL TO DECIMAL C
110 PRINT" ************************
120 PRINT""
130 INPUT" HEXADECIMAL NUMBER (0000-
140 IF J$<"0000" OR J$>"FFFF" OR LEN
150 FORJ=1TO4
160 FORK=1TO16
170 IFMID$(J$,J,1)=MID$(HEX$,K,1) TH
180 NEXTK
190 NEXTJ
200 P(1)=P(1)*4096
210 P(2)=P(2)*256
220 P(3)=P(3)*16
```

```
10 REM ************************
20 REM * UTILITY BOX - PART10 *
30 REM *    (C) SEPT '88      *
40 REM *      WRITTEN BY      *
50 REM * MADHU  SURENDRANATH *
60 REM * 'BIN-DEC  CONVERTER' *
70 REM ************************
90 DIM A(8),B(8)
```

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```
100 A(1)=128:K=1
110 FORJ=6TO1STEP-1:K=K+1
120 A(K)=2^J
130 NEXTJ:A(8)=1
135 PRINT" ***************************"
140 PRINT" BINARY TO DECIMAL CONVERTER"
150 PRINT" ***************************"
160 PRINT
170 PRINT" BINARY NUMBER (0000000-1111111)"
180 INPUT" ";A$
190 IFA$<"00000000"ORA$>"11111111"ORLEN(A$)<>8THEN170
200 FORJ=1TO8
210 IFMID$(A$,J,1)<>"0"THENB(J)=1:B(J)=A(J)
220 NEXTJ
```

```
10 REM ************************
20 REM * UTILITY BOX - PART11 *
30 REM *     (C) SEPT '88     *
40 REM *      WRITTEN BY      *
50 REM * MADHU   SURENDRANATH *
60 REM * 'DEC-BIN  CONVERTER' *
70 REM ************************
80 DIM A(8),B(8)
90 A(1)=128:K=1
100 FORJ=6TO1STEP-1:K=K+1
110 A(K)=2^J
120 NEXTJ:A(8)=1
130 FOR J=1 TO 8:B(J)=0:NEXT J
140 PRINT" ***************************"
150 PRINT" DECIMAL TO BINARY CONVERTER"
160 PRINT" ***************************"
170 PRINT
180 INPUT" DECIMAL NUMBER (0-255)";A:B=A
190 IF A<0 OR A>255 THEN 180
200 FOR J=1 TO 8
210 IFINT(A/A(J))=1 THEN B(J)=1:A=A-A(J)
220 NEXT J
230 FOR J=1 TO 8
240 A$=A$+RIGHT$(STR$(B(J)),1)
250 NEXT J
260 PRINT
270 PRINT" DECIMAL"B"EQUALS BINARY NO= "A$
280 END
```

```
10 REM ***************************
20 REM * UTILITY BOX - PART12 *
30 REM *      (C) SEPT '88       *
40 REM *       WRITTEN BY        *
50 REM * MADHU   SURENDRANATH *
60 REM * 'HORIZONAL SCROLLER' *
70 REM ***************************
80 REM FORGET ALL REM LINES TO USE AS PART OF YOUR OWN PROGRAM
90 REM YOU CAN DEFINE A$ AS YOUR OWN MESSAGE
100 A$="........THIS.IS.A.DEMO.MESSAGE........"
110 PRINT CHR$(147)
120 FORJ=1TO25:B$=B$+" ":NEXTJ
130 C$=B$+A$+A$+A$+B$
140 FOR A=1 TO LEN(C$)
150 PRINT TAB(2) MID$(C$,A,35)
160 PRINT""
170 FOR B=1 TO 50:NEXT B
180 NEXT A
190 END
```

LAND-IT!

Stephen Morse

This is a simple bit of fun with UDGs and the like for the +4. To complete the game, fly your very unstable bathtub round a few levels, trying not to crash into the green or fly off the screen. Land on the coloured pad — and you've made it!

```
0 SCNCLR:PRINT"[CD28]AGG[CD30]":GRAPHIC0
1 PRINT"[CR14]LAND IT [CD20]":VOL7
2 PRINT"[SP13]PRESS FIRE":COLOR0,2,5:COLOR4,2,4
3 GETA$:IFA$="T"THEN7
4 READA,C,B,D:IFA=1THENRESTORE:R=R+1:GOTO3
5 SOUND1,A,10:SOUND2,B,9:SOUND3,1010,2:SOUND1,C,10:SOUND2,D,9:SOUND3,800,3:IFA$=
"
 "THENEND
6 IFR=1THEND=1:ELSED=0:GOTO3
7 SCNCLR:VOL8:B=0
8 GRAPHIC3,1:COLOR1,1:COLOR2,6,5:COLOR3,2,6:COLOR0,2,7
9 BOX,1,2,4,4:DRAW,0,3TO5,3:DRAW,1,1TO2,2TO3,2TO4,1:SSHAPEB$,0,0,5,4:SCNCLR
10 BOX2,0,0,5,5,,1:BOX,1,2,4,4:DRAW,0,3TO5,3:DRAW,1,1TO2,2TO3,2TO4,1:SSHAPEC$,0,
0
,5,4:SCNCLR
11 SSHAPED$,0,0,5,4:SCNCLR
12 BOX2,0,0,5,5,,1:SSHAPEE$,0,0,5,4:SCNCLR
13 DRAW2,0,140TO160,140:PAINT2,0,141:FORP=0TO3:DRAW3,80,140+PTO100,140+P:NEXT
14 U=50:N=INT(140*RND(1))+1
```

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```
15 TI$="000000":Q=3500:Y=Y+1
16 J=JOY(1):IFD=1THENGOSUB83
17 IFTI>3500THENCHAR,0,0,"OUT OF FUEL!!":H=H+.6:SOUND3,1020,2
18 COLOR3,INT(16*RND(1))+1,INT(7*RND(1))+1
19 IFTI>1500ANDTI<2000THENSOUND1,800,10
20 IFX>160THENGOTO63
21 IFX<0THENGOTO63
22 IFJ=1THENH=H+.8:GOTO26
23 IFJ=3THENK=K+.8:GOTO26
24 IFJ=5THENH=H-.8:GOTO26
25 IFJ=7THENK=K-.8
26 T=INT(10*RND(1))+1
27 IFT=1THENH=H+.3:GOTO31
28 IFT=3THENH=H-.3:GOTO31
29 IFT=5THENK=K-.3:GOTO31
30 IFT=7THENK=K+.3
31 N=N+K:X=N:U=U+H:Z=U:LOCATEX,Z+3:S(Y)=Q-TI
32 IFB>0ANDRDOT(2)=0THEN63
33 IFB<1ANDRDOT(2)=2THEN63
34 IFRDOT(2)=3THENB=B+1:GOTO65
35 LOCATEX+6,Z+3:IFB>0ANDRDOT(2)=0THEN63
36 IFB<1ANDRDOT(2)=2THEN63
37 IFRDOT(2)=3THENB=B+1:GOTO65
38 IFB<1THENGSHAPED$,XX+1,ZZ:XX=X:ZZ=Z:GSHAPEB$,X+1,Z
39 IFB>0THENGSHAPEE$,XX+1,ZZ:XX=X:ZZ=Z:GSHAPEC$,X+1,Z
40 GOTO16
41 GRAPHIC3,1:COLOR0,6,5:COLOR2,2,7
42 DRAW2,130,0TO120,136TO20,60TO20,150TO140,150TO150,0:PAINT2,132,1
43 FORP=0TO3:DRAW3,23,150+PTO33,150+P:NEXT
44 N=135:U=10:H=0:K=0:RETURN
45 GRAPHIC3,1
46 FORP=100TO130:DRAW2,0,PTO160,P+10:NEXT:FORP=120TO130:DRAW2,0,PTO160,P:NEXT
47 FORP=0TO3:DRAW3,120,130+PTO130,130+P:NEXT
48 N=10:U=110:H=0:K=0:RETURN
49 GRAPHIC3,1
50 DRAW2,40,0TO40,60TO60,60TO60,120TO100,120TO100,130TO60,130TO60,160TO20,160
51 DRAW2,20,160TO20,140TO30,140TO30,120TO14,120TO14,180TO70,180TO70,160TO110,160
52 DRAW2,110,160TO110,100TO70,100TO70,40TO50,0:PAINT2,41,1
53 FORP=0TO3:DRAW3,20,140+PTO30,140+P:NEXT:N=45:U=10:H=0:K=0:RETURN

54 GRAPHIC3,1
55 DRAW2,0,80TO20,80TO20,40TO110,40TO110,0:DRAW2,0,90TO20,90TO20,140TO110,140TO1
1
0,200
56 DRAW2,120,0TO120,60TO40,60TO40,120TO120,120TO120,200:PAINT2,112,0
57 FORP=0TO5:DRAW2,0,0-PTO160,0-P:NEXT:FORP=0TO3:DRAW3,110,197+PTO120,197+P:NEXT
:
N=10:U=85
58 H=0:K=0:RETURN
59 GRAPHIC3,1
60 DRAW2,50,0TO50,50TO110,160TO110,180TO80,170TO30,80TO10,80TO10,100TO20,90TO80,
1
95
61 DRAW2,80,195TO120,195TO115,140TO60,40TO60,0:PAINT2,51,0
62 FORP=0TO3:DRAW3,10,100+PTO20,90+P:NEXT:N=55:U=5:H=0:K=0:RETURN
63 GRAPHIC0,1:PRINT"YOU CRASHED":DO:GETA$:LOOPUNTILA$=""
64 SOUND3,900,1:SOUND3,1010,2:GETA$:IFA$="T"THENRUN:ELSE64
```

cont. on next page

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```
65 IFD=1THENRUN:ELSEGRAPHIC3,1:ON B GOSUB41,45,49,54,59,80,67
66 GOTO15
67 GRAPHIC0,1:PRINT"WELL DONE!!! YOU HAVE COMPLEATED ALL 7[SP2]LEVELS"
68 FORP=1TO6:SC=SC+S(P):NEXT:PRINT"[CD3]YOU SCORED ";SC:FORP=0TO3000:NEXTP:RUN
69 DATA516,770,897,897,453,739,881,881,383,704,864,864,345,685,854,854
70 DATA364,694,859,859,262,643,834,834,169,596,810,810,215,619,822,822,118,571
71 DATA798,798,7,516,770,7
72 DATA7,7,770,770,516,516,770,770,7,7,770,770,516,516,596,596,169,169,516,516.8
1
0
73 DATA7,7,897,770,7,7,770,516,7,7,516,7,7,7,7,7,622,62,784,904,62,62,784,543
74 DATA7,7,516,516,7,7,516,516,62,62,543,62,62,543,543,118,118,571,571,
75 DATA7,7,516,516,7,7,516,516,62,62,543,62,62,543,543,118,118,571,571,
76 DATA7,62,118,143,169,215,262,303,345,364,383,418,453,484,516,543,571,583,596,
6
19
77 DATA643,664,685,694,704,721,739,754,770,784,798,804,810,822,834,844,854,859,8
6
4
78 DATA872,881,889,897,904,911,914,917,923,929,934,939,941,944,948,953,7,,,,
79 DATA1,1,1,1,1,1,1,1,1,1,1,1
80 GRAPHIC3,1:CIRCLE2,80,100,60,80,,,,1:CIRCLE2,80,100,70,96,,,,1:PAINT2,17,100
81 FORP=0TO5:DRAW0,100,97+P+2TO200,97+P+2:DRAW3,140,95+PTO150,95+P:NEXTP
82 FORP=104TO118:DRAW2,50,P-20TO143,P+10:NEXT:N=55:U=118-26:K=0:H=0:RETURN
83 IFX<90THENJ=3
84 IFX>98THENJ=7
85 IFX>80ANDX<100THENJ=1
86 IFX<80ANDZ>110THENJ=5
87 IFX>100ANDZ>110THENJ=5
88 CHAR,0,0,"DEMO":RETURN
```

★ Program Submission Procedure ★

DO NOT submit any program or routine that you do not either own or have property authority to do so.

ALWAYS include your name, address and the date on all material and any enclosures.

Do not forget to make it clear exactly which computer/s your program or article is applicable to.

Include ROM or DOS versions wherever they are pertinent.

If you have to submit work which is hand-written then you must make sure it is printed clearly.

Number all pages.

Never use staples. Use paperclips if necessary.

If you are saving your program to tape then save it AT LEAST twice on each side.

When you save a program on disk save it twice and call the second file "BACKUP".

Remember to label all tapes and disks with your name and the title of the program. Label tape or disk with your name and the name or title of the program.

Always ensure that disks are well packaged. They should ideally be sent in a commercial disk mailer or at least packed between two pieces of hardboard or rigid plastic.

Please allow at least 8 weeks for acknowledgement as all programs have to be thoroughly tested and made into a suitable format.

Enclose a self-addressed stamped envelope or package if you would like your program to be returned.

★ Programming tips ★

If you can, use CHR$(x) type commands instead of those hard to read graphic symbols.

If necessary renumber your program on completion a many readers use auto number utilities to ease typing in.

Try to keep instructions within the program itself at a sensible level. You can expand on them within the accompany text if necessary.

TEST your programs before submitting them or even better get a friend to test them for you.

If a program contains machine code data please use decimal and not hex as there are fewer digits to be confused. Try and keep the same number of data statements in each line. Please add some form of error checking if your program contains more than five lines of data.

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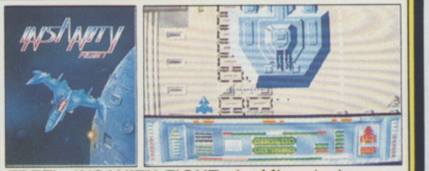
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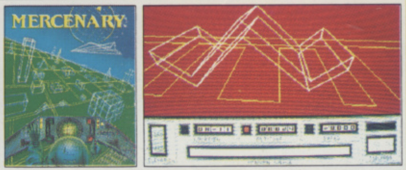
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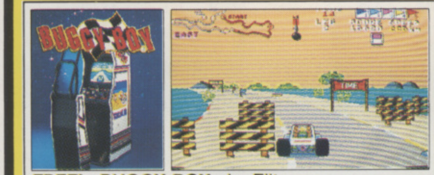
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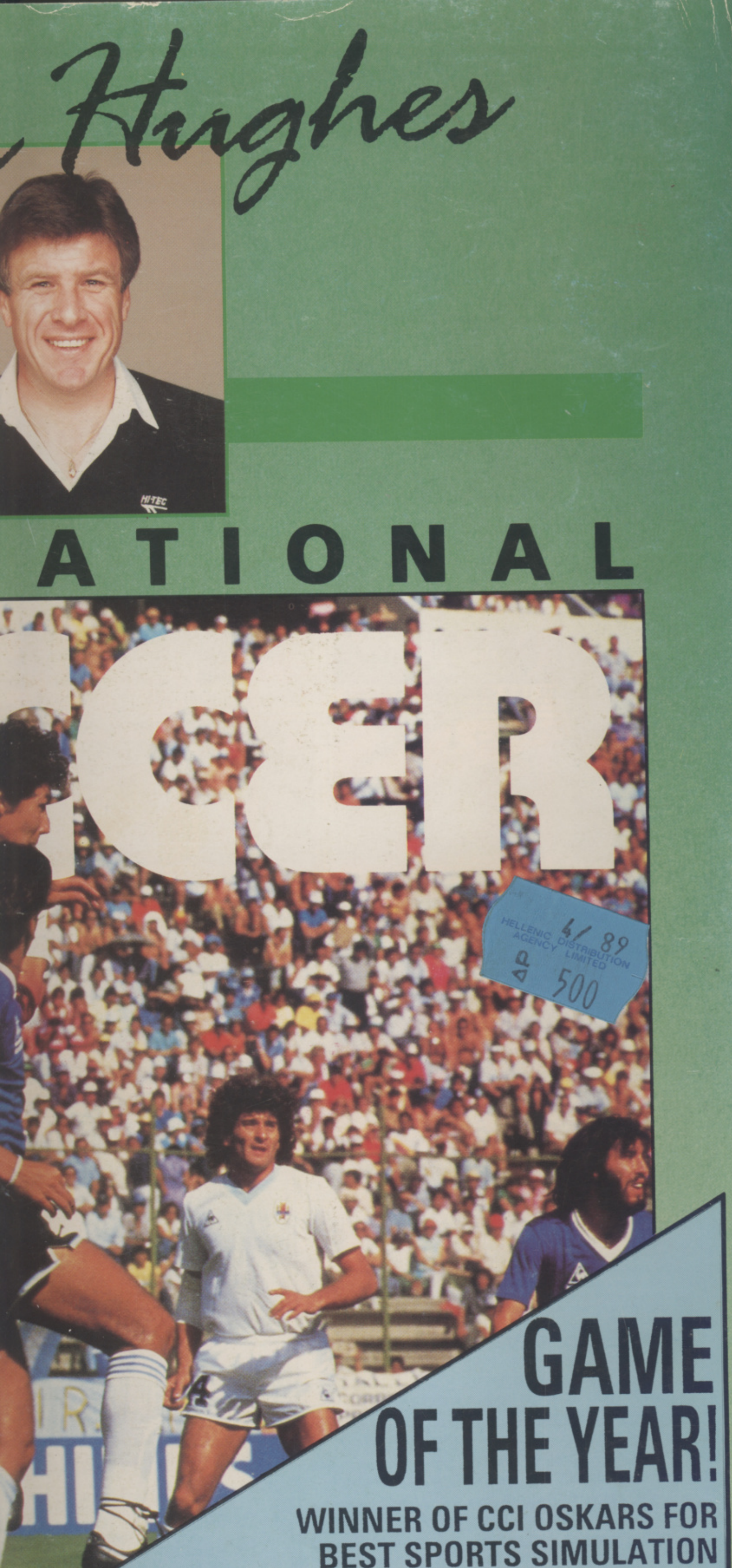
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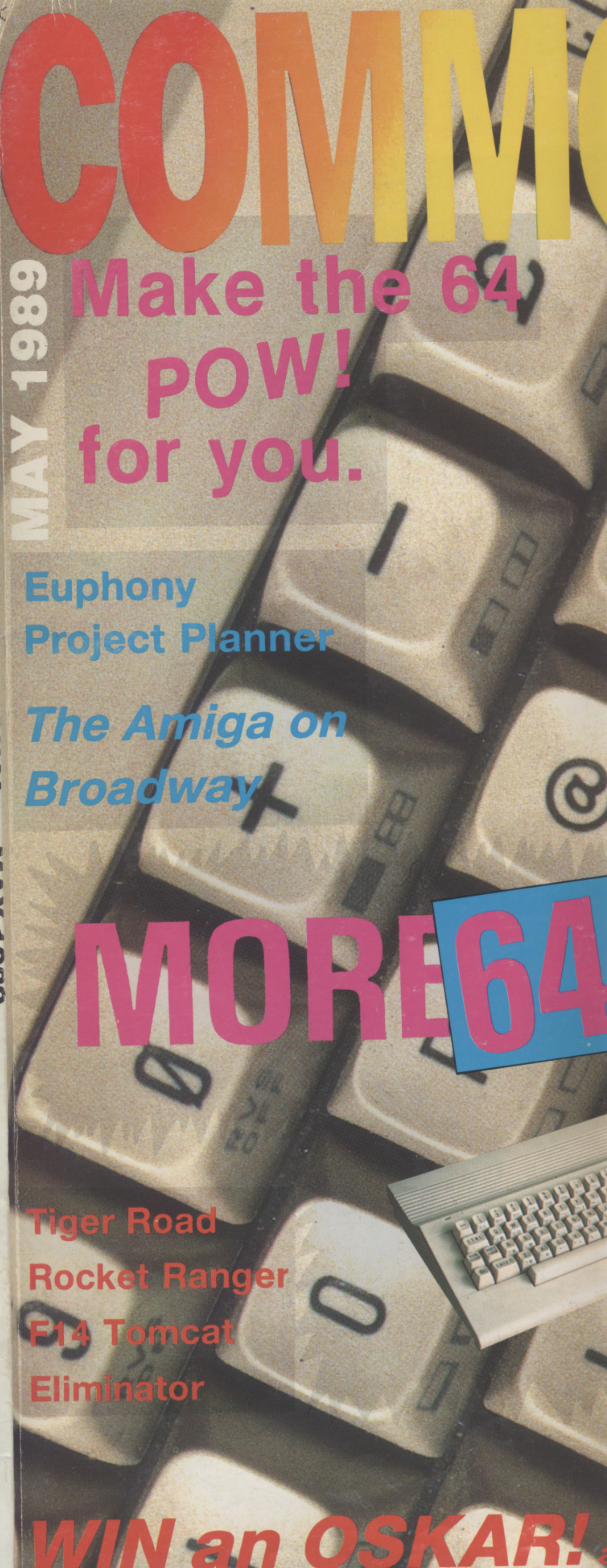

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